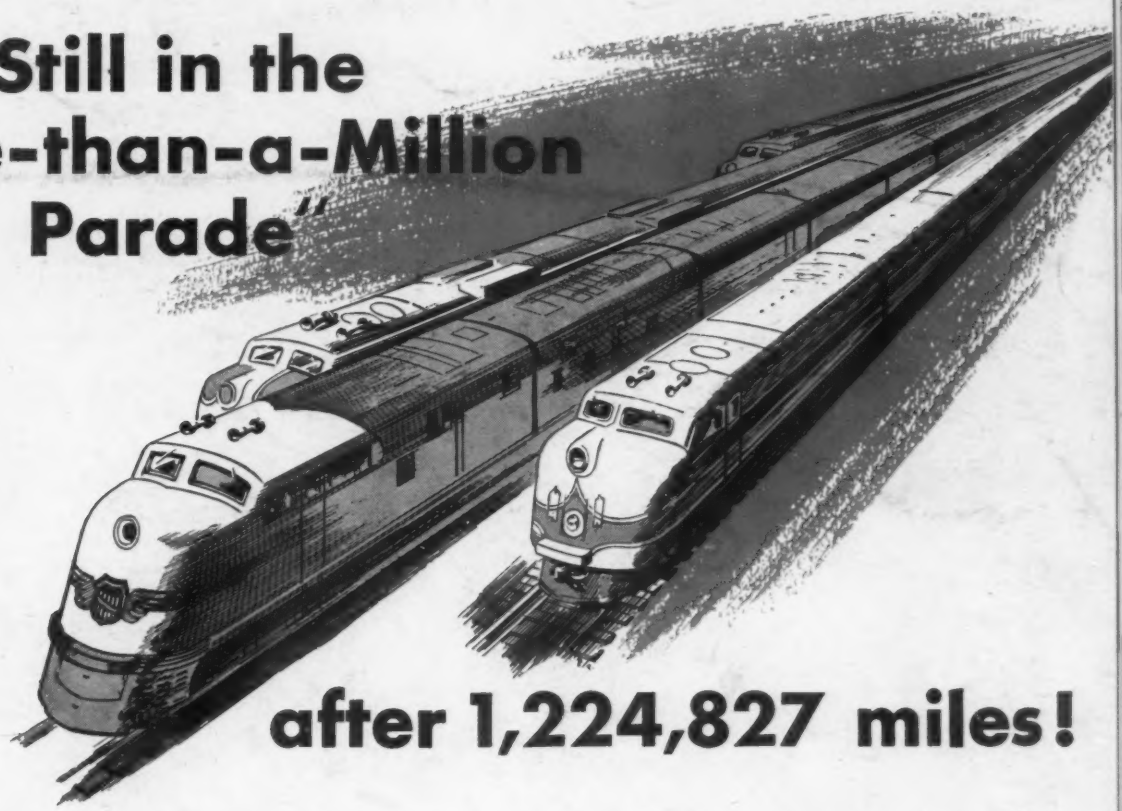
SEPTEMBER 22, 1945

Railway Age

Founded in 1856

S. 31

Still in the "More-than-a-Million Parade"



after 1,224,827 miles!

LAST SEPTEMBER — a year ago —a General Motors Diesel passenger locomotive (9M1A) in the Kansas City-Denver service of the Union Pacific Railway had rolled up 1,018,419 miles without a major overhaul.

Now comes word that it has increased its record to 1,224,827 miles, as of July 31, 1945, without backshopping.

This GM Diesel, which was put in service in August, 1940, has averaged 640 miles a day.

Such a record is evidence not alone of engineering skill and design in production but also of the care with which the 9M1A is being serviced and maintained by the Union Pacific men responsible for its efficient operation.

• • •

Backing up the durability and design of General Motors locomotives is a parts service unique in railway supply circles.

ADD SECURITY TO VICTORY • BUY VICTORY BONDS

YOUTHFUL IN STAYING POWER • VETERANS FOR PERFORMANCE

GENERAL MOTORS LOCOMOTIVES

ELECTRO-MOTIVE DIVISION

GENERAL MOTORS CORPORATION • LA GRANGE, ILL.

1 out of 5

GULF MOBILE AND OHIO

freight cars are equipped with

UNIT TRUCKS

THE SWING TO UNIT IS EVIDENT

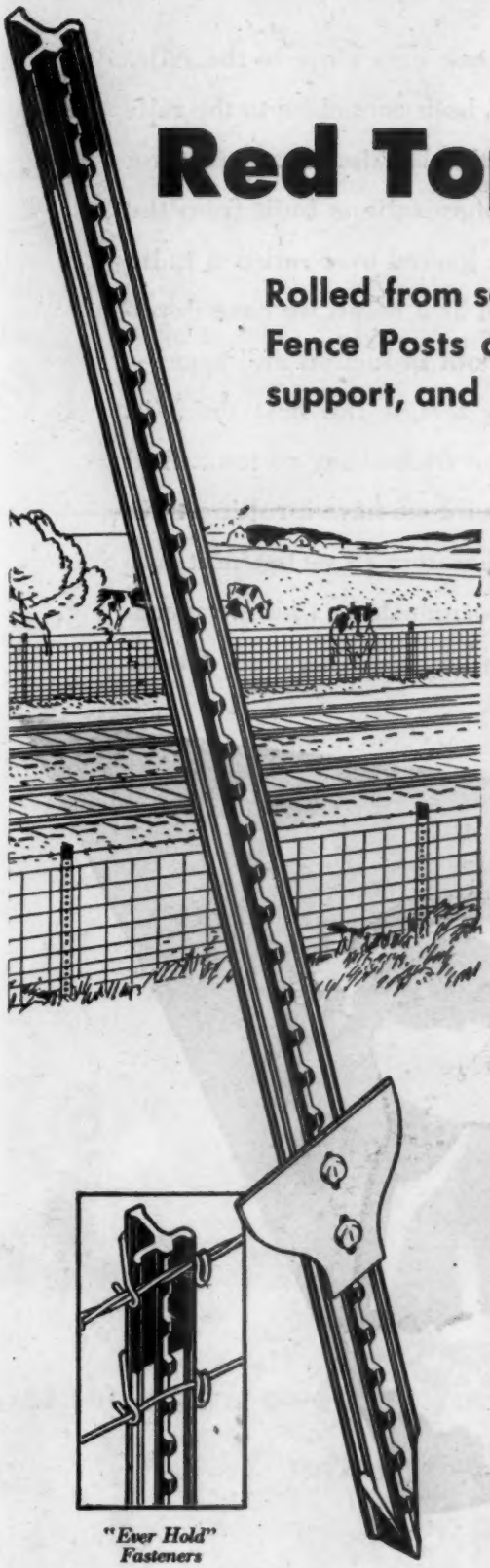
UNIT TRUCK CORPORATION

140 Cedar Street **New York 6, N. Y.**

Published weekly by Simmons-Boardman Publishing Corporation, 1309 Noble Street, Philadelpha, Pa. Entered as second class matter, January 4, 1933, at the Post Office at Philadelphia, Pa., under the act of March 3, 1879. Subscription price $6.00 for one year U. S. and Canada. Single copies, 25 cents each. Vol. 119, No. 12.

Red Top Steel Fence Posts

Rolled from selected rail steel by Inland, Red Top Steel Fence Posts are guaranteed to outlast the fence they support, and to cut installation and maintenance costs.



"Ever Hold" Fasteners

Red Top Steel Fence Posts assure better right-of-way protection. In the first place they have great strength and rigidity. They make a flexible fence, one capable of withstanding sudden shock without damage. Quick pressure at any point is distributed, and when the pressure is removed the fence springs back to its original position.

Unlike wooden posts, **Red Top** Steel Posts will not rot or burn. They are fence supports that help give maximum protection, at minimum cost for installation and maintenance.

Available in bundles of five, **Red Top** Steel Fence Posts are easy to handle, pile and count. In storage, they take up only a fraction of the space required by wood posts. An ordinary railway trailer will carry 800 posts, enough for 2½ miles of fence.

Use **Red Top** Steel Posts to fence your right-of-way and to replace rotted, burnt and broken wood posts. They will save you time, labor, and dollars.

Bars • Plates • Floor Plate • Structurals • Piling
Reinforcing Bars • Sheets • Strip • Tin Plate

INLAND STEEL COMPANY

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An ear to the rail

WE always keep our ears close to the rails. In fact we have had both ears close to the rails for a long time. That's why **Aireon** can offer you railroad radio communications built from the roadbed up . . . We looked over railroad radio with a fresh eye and as a result we have developed equipment—both induction and space—which we modestly feel is the best there is. Some of our railroad friends say so too...And just to prove our point we have a rolling train communications laboratory all set to shunt onto your own line and demonstrate what we mean. Any **Aireon** office will gladly arrange details.

Aireon

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Radio and Electronics • Engineer Power Controls

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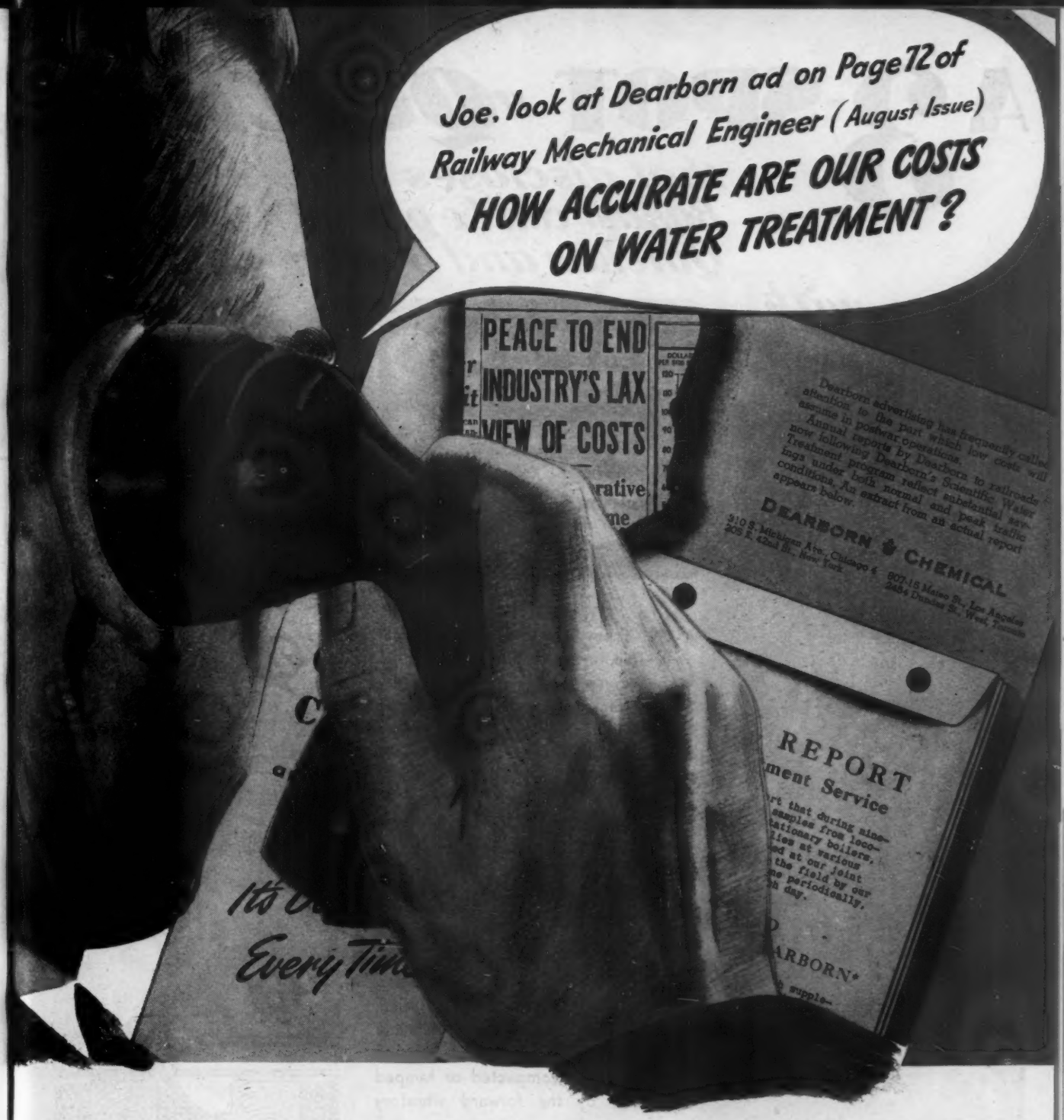
Joe, look at Dearborn ad on Page 72 of
Railway Mechanical Engineer (August Issue)
HOW ACCURATE ARE OUR COSTS ON WATER TREATMENT?
PEACE TO END INDUSTRY'S LAX VIEW OF COSTS
DEARBORN CHEMICAL
REPORT

Get the trains over the road at any cost was the order of the day..

But **many executives are checking costs now for peacetime operation**

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TRADE MARK REGISTERED

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THE *LEADER* FOR OVER HALF A CENTURY

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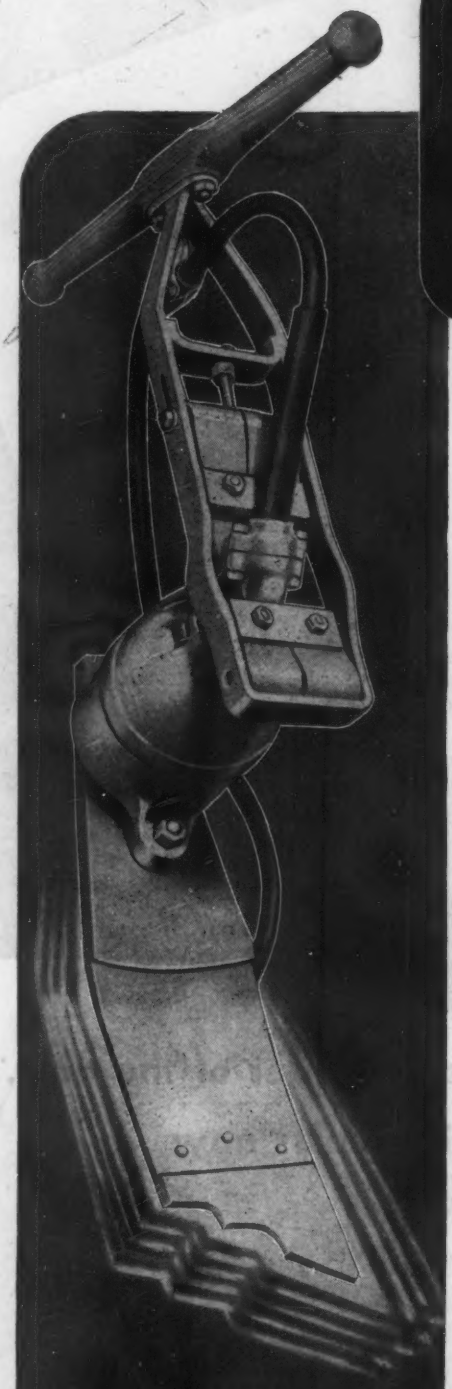
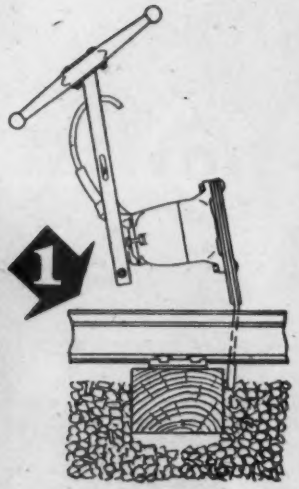
that discloses why Ballast can be placed Quicker and Better

with

JACKSON VIBRATORY Tampers





1. From a vertical position, penetration to the pocket below the tie is accomplished in a jiffy by tilting the Jackson Tamper so that the corner of the tip can utilize the sidewise and, in this position, "chopping" action of the blade.

2. Inclined back from the tie and moved from side to side, the vibratory action of the blade quickly opens a wide opening for the access of new ballast.

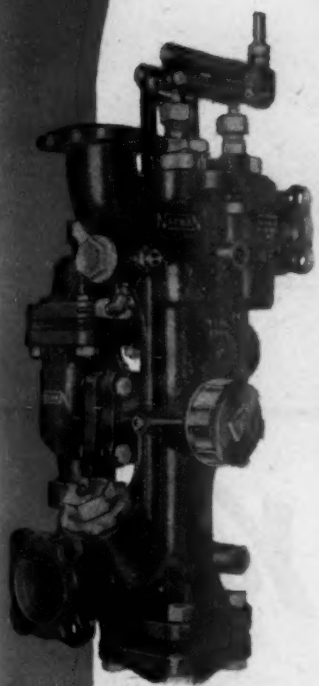
3. The sidewise vibratory action of the blade keeps the surrounding new ballast constantly in motion, feeding it to the end of the blade where it is firmly consolidated with the already compacted or tamped ballast by the forward vibratory blows.

The result, in ballasts of all types, is a smoother, more densely compacted tie-bed than can be accomplished by any other method — done with remarkable speed — with no crushed ballast, no unfilled holes. And that in brief, is the reason Jackson Tampers are first choice with the majority of American railroads. Write for literature completely describing Jackson Tampers and Power Units and how to use them.

ELECTRIC TAMPER & EQUIPMENT CO., LUDINGTON, MICH.

NATHAN PRODUCTS

ON THE NEW YORK CENTRAL'S *New* NIAGARA

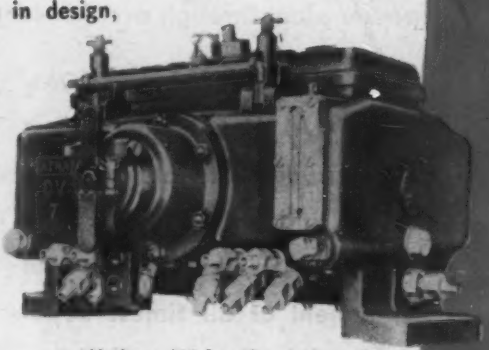


Nathan Type 4000 Injector meets every requirement for heavy duty locomotive service. It is safe, reliable and simple to operate.

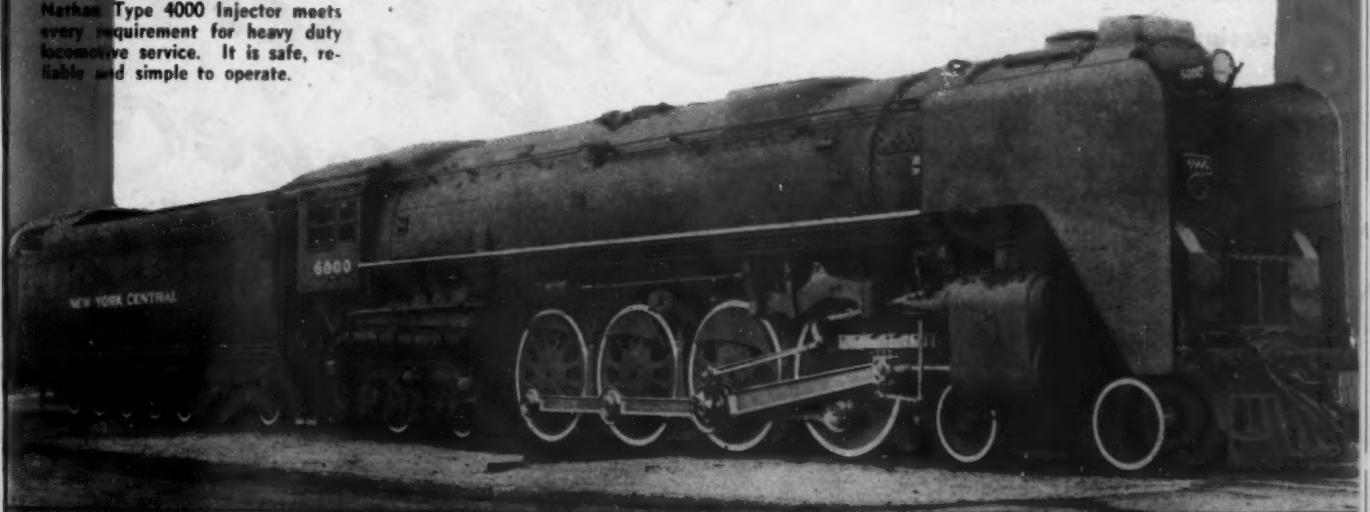
THE Niagara is the newest and most powerful steam locomotive designed and constructed for the New York Central to operate in high-speed passenger and freight service.

In keeping with the many notable advances in design, power and efficiency, it is very significant that the Niagara is equipped with several Nathan products. There's the Nathan DV-8, 42 pint mechanical lubricator, the Nathan Type 4,000, 14,000 gallon capacity injector, the boiler checks and the Nathan force feed lubricator on the boiler hot pump.

Nathan products, serving railroads over 80 years, have contributed much to the progress in locomotive design and performance.



Nathan DV-8, 42 pint mechanical lubricator provides valveless feeds to piston valves, cylinders, guides and stoker engine.



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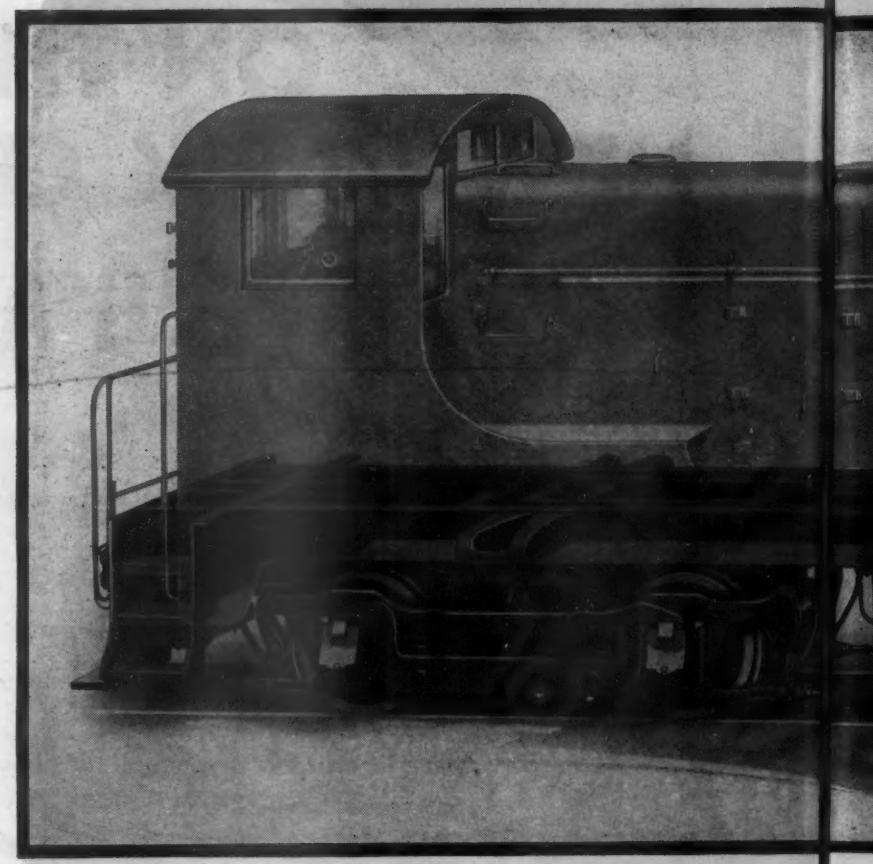
Established 1864

FOR LONG RANGE



One-piece, cast steel, COMMONWEALTH UNDERFRAMES are furnished completely machined and ready for assembly, thus permitting increased locomotive output. Great strength is provided to withstand the severe shocks of switching service. The rugged construction is valuable insurance against damage to the power plant through accidents.

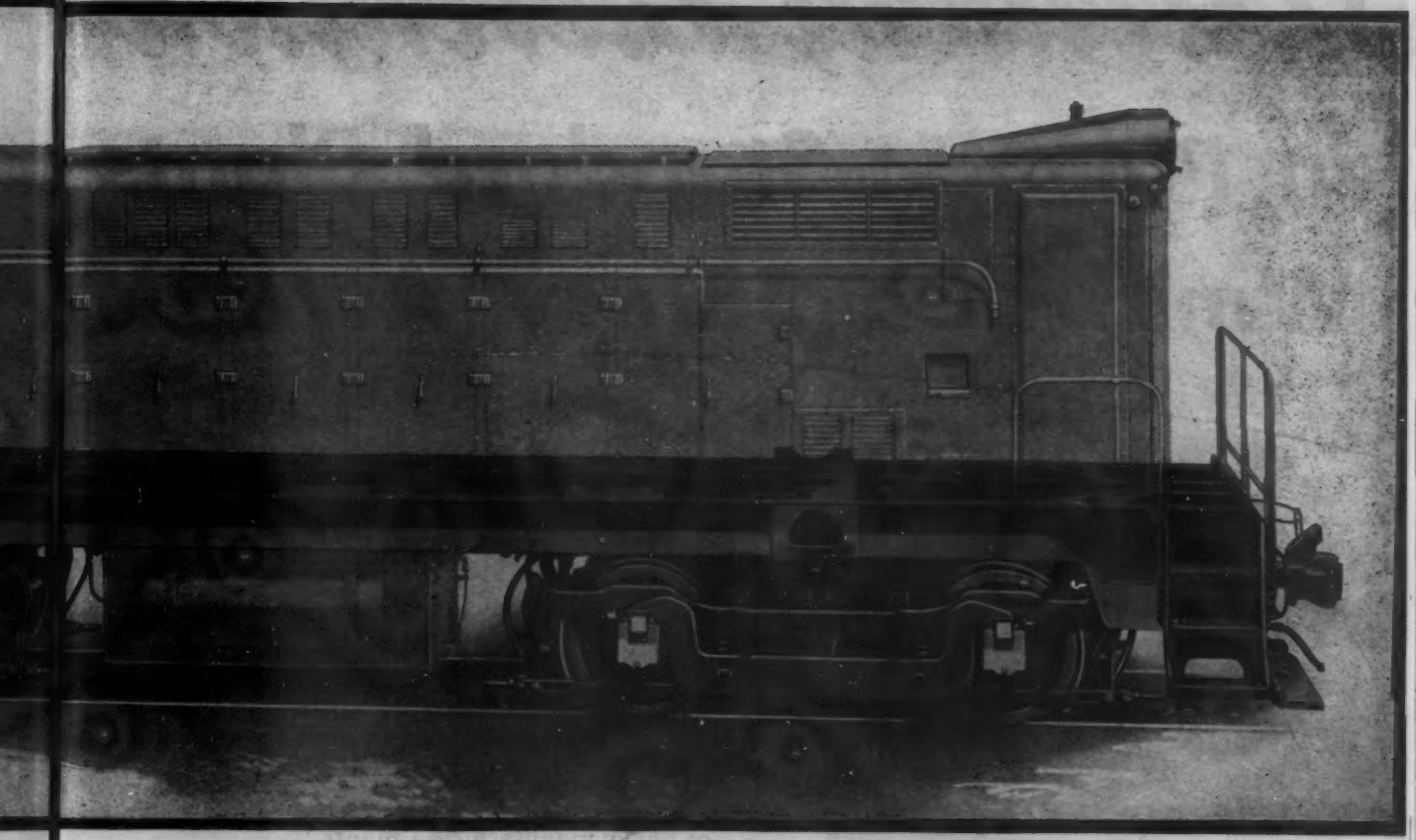
MOTOR TRUCKS have COMMONWEALTH One-Piece Cast Steel Frames with integral pedestals and bolsters. This unit construction insures true wheel alignment at all times. Superior performance, good riding qualities, and low upkeep costs result from this simplified design.

For maximum performance and long-range economy, specify COMMONWEALTH Cast Steel DIESEL UNDERFRAMES and MOTOR TRUCKS.

Equip Your Diesel Switchers with

GENERAL

ECONOMY . . .



COMMONWEALTH

UNDERFRAMES AND TRUCKS

STEEL CASTINGS

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Accident Prevention in Pullman-Standard Plants Wins High Safety Awards

The National Safety Council has presented to *Pullman-Standard* Car Manufacturing Company the 1944 Award of Honor for Distinguished Service to safety for all 12 of this Company's plants.

Our accident frequency rate for 1944 was 72% below the average of similar manufacturing organizations and the severity rate was 52% below the average. *Pullman-Standard* is proud of the honor of now having won all the available awards in the National Safety Council group of heavy manufacturing plants.

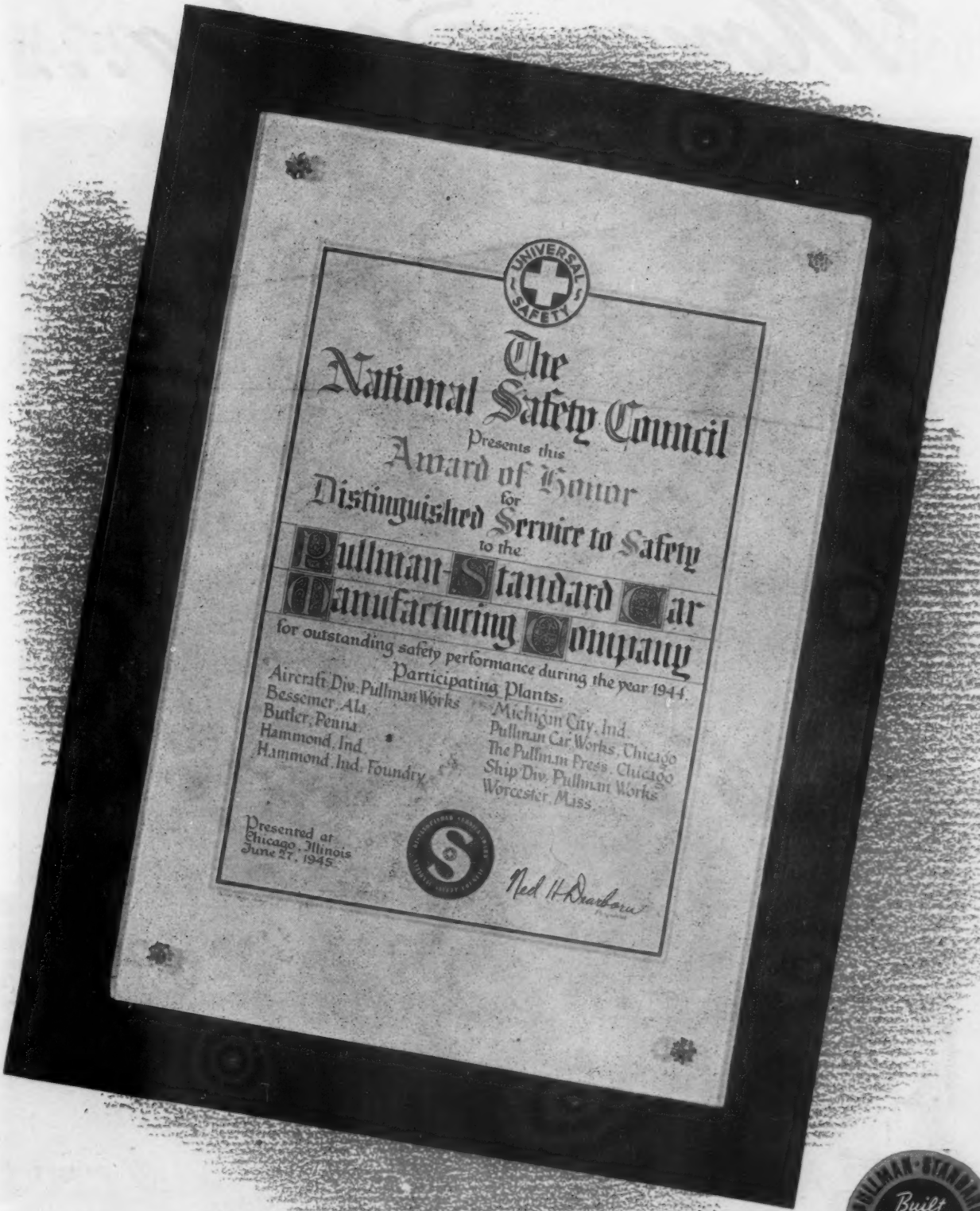
★ ★ ★

We have also won an award for First Place in our group in the 1944 Victory Shipbuilding Safety Contest. In this contest our accident frequency and severity rates were six times better than the average of the 49 large shipyards in the group.

A SAFE PLANT IS AN EFFICIENT PLANT

Pullman-

CHICAGO • NEW YORK



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Standard CAR MANUFACTURING COMPANY

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San Francisco Sales Representative, Mark Noble

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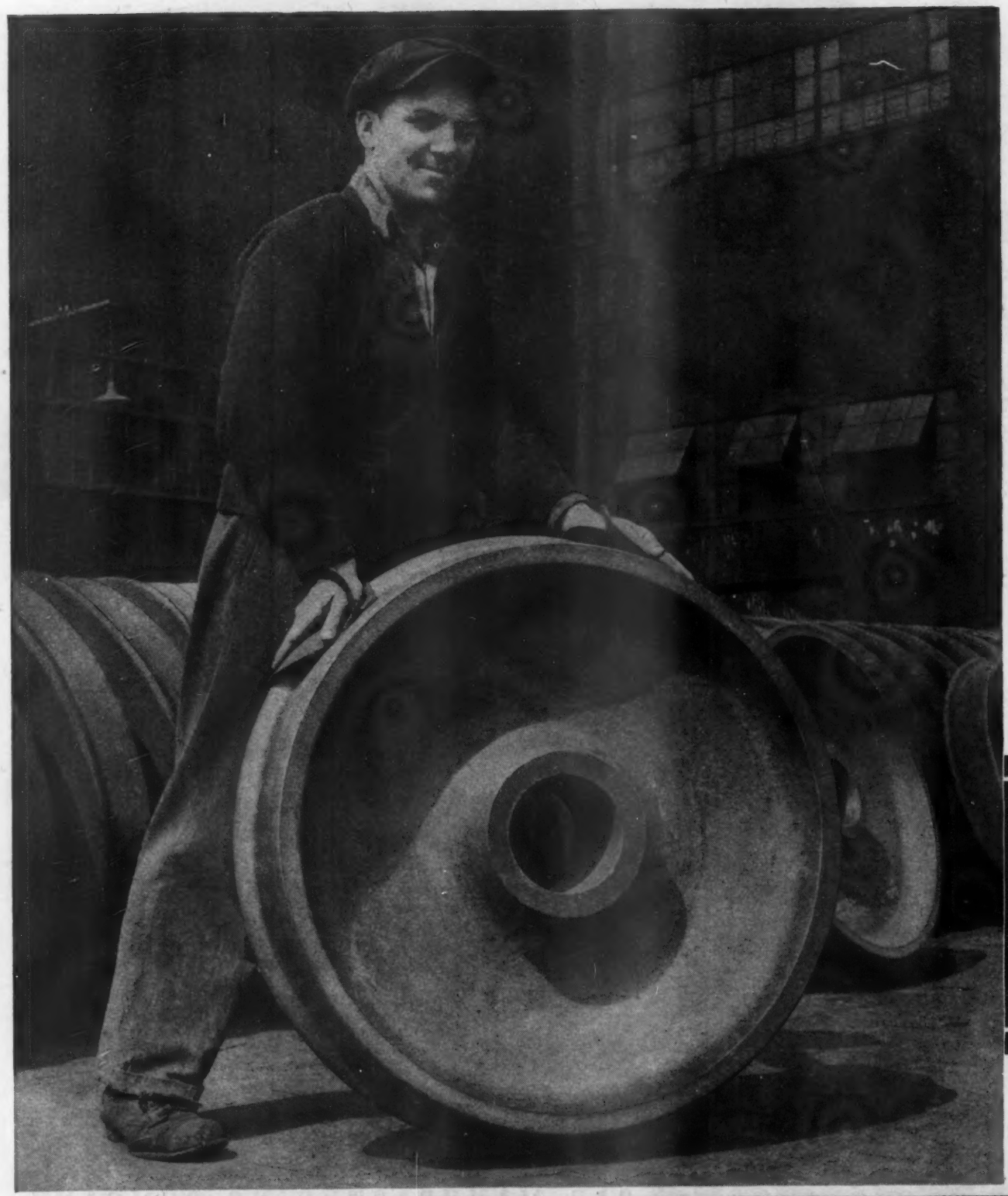


UNITED

U·S·S One-Wear Wrought Steel Wheels

Decreased Maintenance Cost plus better service and greater safety—these are the advantages of changing over to U·S·S One-Wear Wrought Steel Wheels.

The service records of nearly 2,000,000 One-Wear Wrought Steel Wheels merit close attention from managers who must direct safe, efficient, economical railroad operations in the competitive days ahead. On the basis of cost per thousand miles, U·S·S One-Wear Wrought Steel Wheels average substantially less than the cost of freight car wheels of other materials. Under 50/55-ton service, they average considerably more than 200,000 miles . . . under 70-ton service, over 160,000 miles. Many wheels have passed the 300,000 mark and some have rolled over 400,000 miles before being condemned.

Freight cars too often laid up for wheel changes consume a large share of maintenance time and labor before they have produced the revenue they should. U·S·S One-Wear Wrought Steel Wheels add thousands of mile-hours to a freight car's productive life before it must go to the repair track.

Wherever One-Wear Wrought Steel Wheels have been adopted, delays due to wheel failures have been sharply reduced. Because they can endure heavy brake action and impact at high speeds, their safety factor is high.

As you plan to re-equip and re-design rolling stock for the keen competition of peacetime transportation, be sure to specify U·S·S One-Wear Steel Wheels for those jobs where long life under strenuous service conditions is required.

EVERY SUNDAY EVENING, United States Steel presents *The Theatre Guild on the Air.* American Broadcasting Company coast-to-coast network. Consult your newspaper for time and station.

CARNEGIE-ILLINOIS STEEL CORPORATION

Pittsburgh and Chicago

Columbia Steel Company, San Francisco, *Pacific Coast Distributors* · United States Steel Export Company, New York

U·S·S One-Wear Wrought Steel Wheels

★ LESS WEIGHT ★ HIGHER MILEAGE

★ GREATER SAFETY ★ LOWER COST

CARNEGIE-ILLINOIS STEEL CORPORATION · USS · WROUGHT STEEL WHEELS · UNITED STATES STEEL

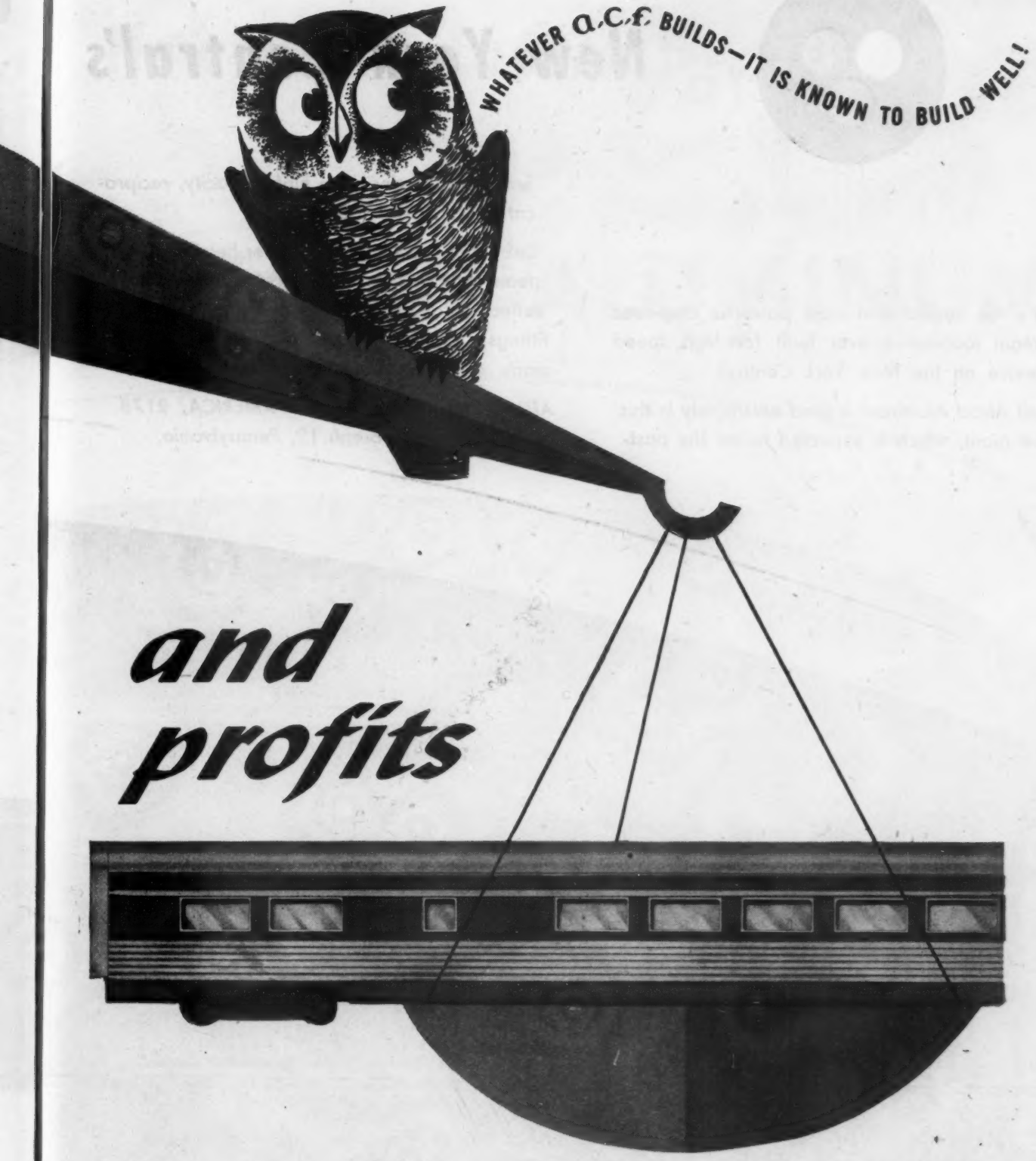
STATES STEEL

about prophets

Ask the man in the street and chances are each has his own ideas as to what the postwar passenger car should be —if the profusion of plans appearing in print are a criterion. Whether his suggestions are *on the beam* or not, one vital fact appears self-evident: AN AWAKENED PUBLIC FULLY EXPECTS SIGNIFICANT ADVANCES IN POSTWAR ROLLING STOCK!

As practical, experienced car builders, we of A.C.F. have keen ears tuned to *prophecy* and capable hands turned to *production.*

Working with our own designs, the railroads', or a combination of both, we are building cars that will win the public's *preference* — and an impressive, *profitable* share of the total dollars spent on travel.



and profits

a.c.f. AMERICAN CAR AND FOUNDRY COMPANY

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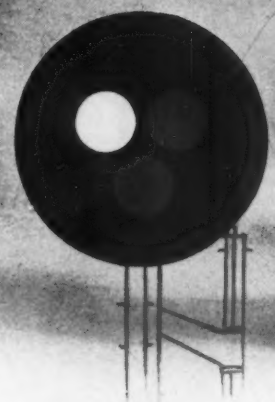


New York Central's

It's the largest and most powerful coal-fired steam locomotive ever built for high speed service on the New York Central!

And Alcoa Aluminum is used extensively in this new giant, which is expected to set the post-war trend of design in high capacity, reciprocating coal-fired locomotives.

Cab, cab ventilators, cylinder-head casings, steam chest casings, sandbox and piping, smoke deflectors, air compressor covers, conduits and fittings, running boards and handrails are made of Alcoa Aluminum.

ALUMINUM COMPANY OF AMERICA, 2178 Gulf Building, Pittsburgh 19, Pennsylvania.

ALCOA ALUMINUM

ALCOA
ALUMINUM

New Giant Locomotive

features use of

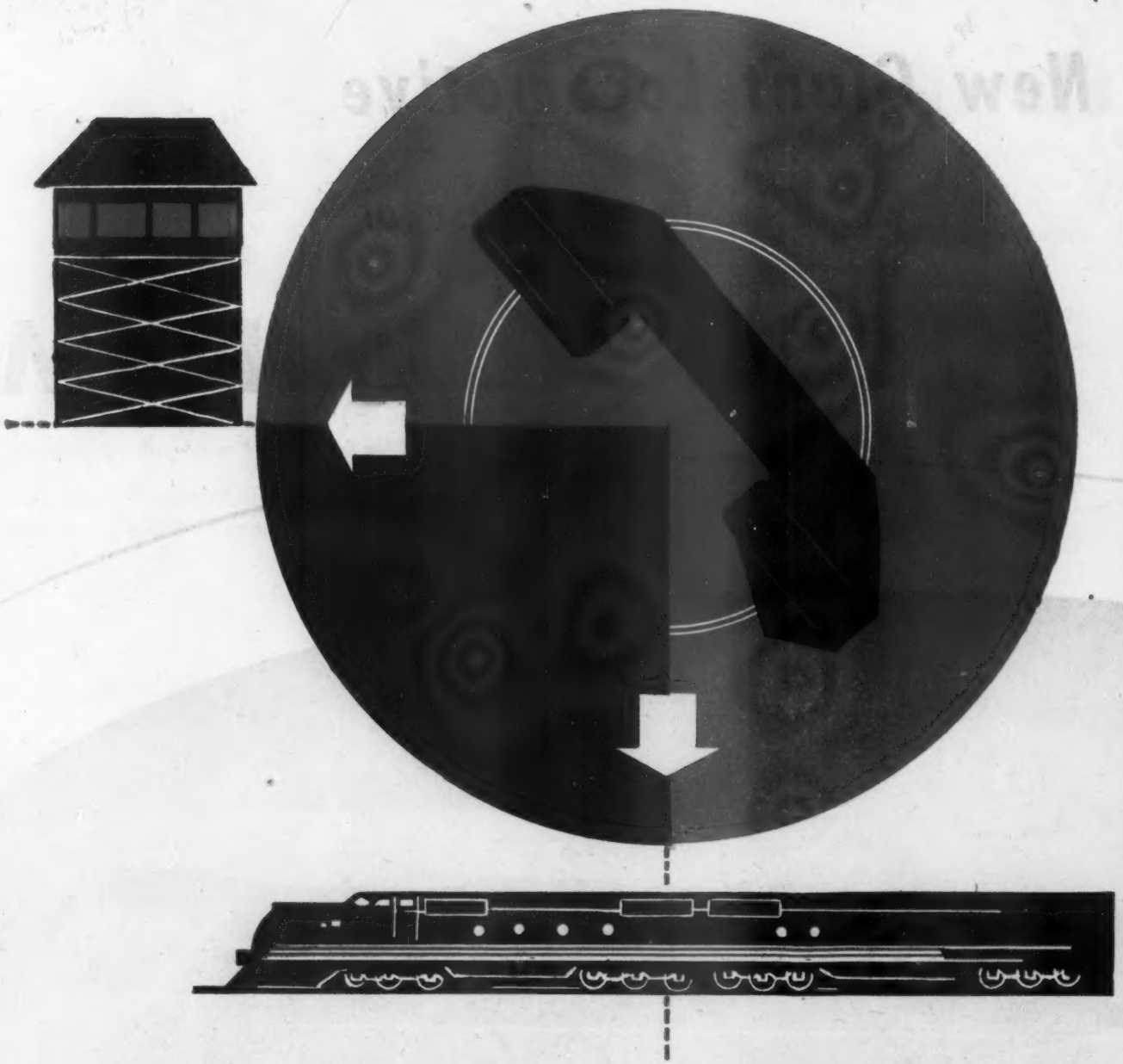
ALCOA ALUMINUM

HIGHLIGHTS ON NEW YORK CENTRAL'S "NIAGARA"

Name—"The Niagara"
Number—6000
Builder—American Locomotive Co.
Length—97 feet

Wheel Arrangement—4-8-4
Coal Capacity—46 tons
Water Capacity—18,000 gallons
Horsepower—more than 6000 h.p.

Steam Pressure—275 pounds for 75-inch driving wheels
Boiler—new design fire tube, greatest diameter ever used on NYC



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CONTACT...VIA SPACE RADIO

WAYSIDE STATION TO TRAIN... Something's wrong down the line . . . a washout; a landslide; a loose rail . . . many of yesterday's costly delays can be avoided today through the use of space radio. Trainmen report the trouble to the wayside station. The tower operator, notified of the emergency, warns approaching trains, reroutes traffic, sends repair crews . . . Many possible accidents are averted.

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A New Line of Forged Adjustable Rail Braces

PRESENTED BY

PETTIBONE MULLIKEN CORPORATION

. . THE RESULT OF SUGGESTIONS FROM RAILROAD MAINTENANCE OF WAY AND SIGNAL DEPARTMENTS

Maximum Bracing—Minimum Maintenance—Longer Service Life

PETTIBONE MULLIKEN design (1) Reduces the need for full rigid clamping. (2) Supplies constant bracing to the rail whether bolts are tight or loose or whether no bolts are used. (3) Controlled flexibility—not attempting to stop the wave or up-and-down motion of the rail, yet restricting tipping or side-thrust—no wide gage—close signal adjustments. (4) Provides larger, better fitting wearing areas of forged, corrosion resistant steel, thus reducing the frequency of adjustment. (5) Makes infrequent adjustment easy.

Two Bolt Brace

Bolts will be initially tighter and will stay tight longer than on other bolted braces. Maintains gage and is an effective brace to the rail even if bolts work loose. Square-head acorn nuts spaced for 180° turn with ordinary track wrench. 11 pieces—easy to install, adjust or remove.

Write for Bulletin No. 1101

One Bolt Brace

Bolt will be initially tighter than on other braces. Single bolt acts as a pivot under rocking motion caused by change of wheel weight from receiving to leaving edges of plate—tends to remain tight longer. Maintains gage and is an effective brace to rail even if bolt works loose. Square-head acorn nut permits 180° turn with ordinary track wrench. 8 pieces—easy to install, adjust or remove.

Boltless Brace

No bolts to corrode, wear or tighten. Controlled flexibility—up and down or wave motion of rail is not limited, yet restricts its tipping or side-thrust. Maintains gage, and permits accurate signal adjustments. Simplicity assures proper maintenance. Design permits single or double spiking on outside of stock rail if desired. 4 pieces—wedge, brace, key and plate.

"Quality Since 1880"

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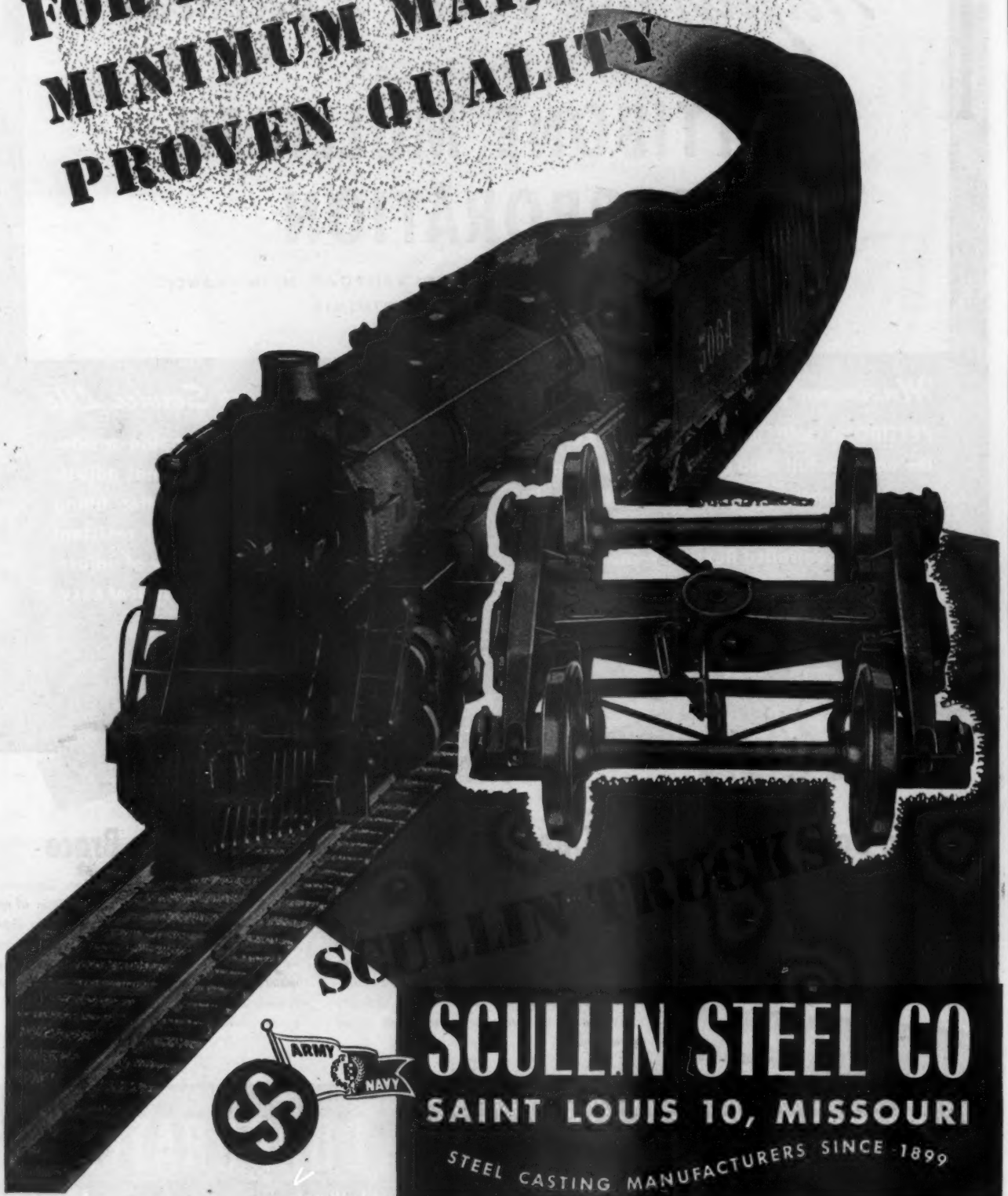
FOR DEPENDABLE SERVICE
MINIMUM MAINTENANCE
PROVEN QUALITY



ARMY NAVY

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SAINT LOUIS 10, MISSOURI

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DESIGN FOR

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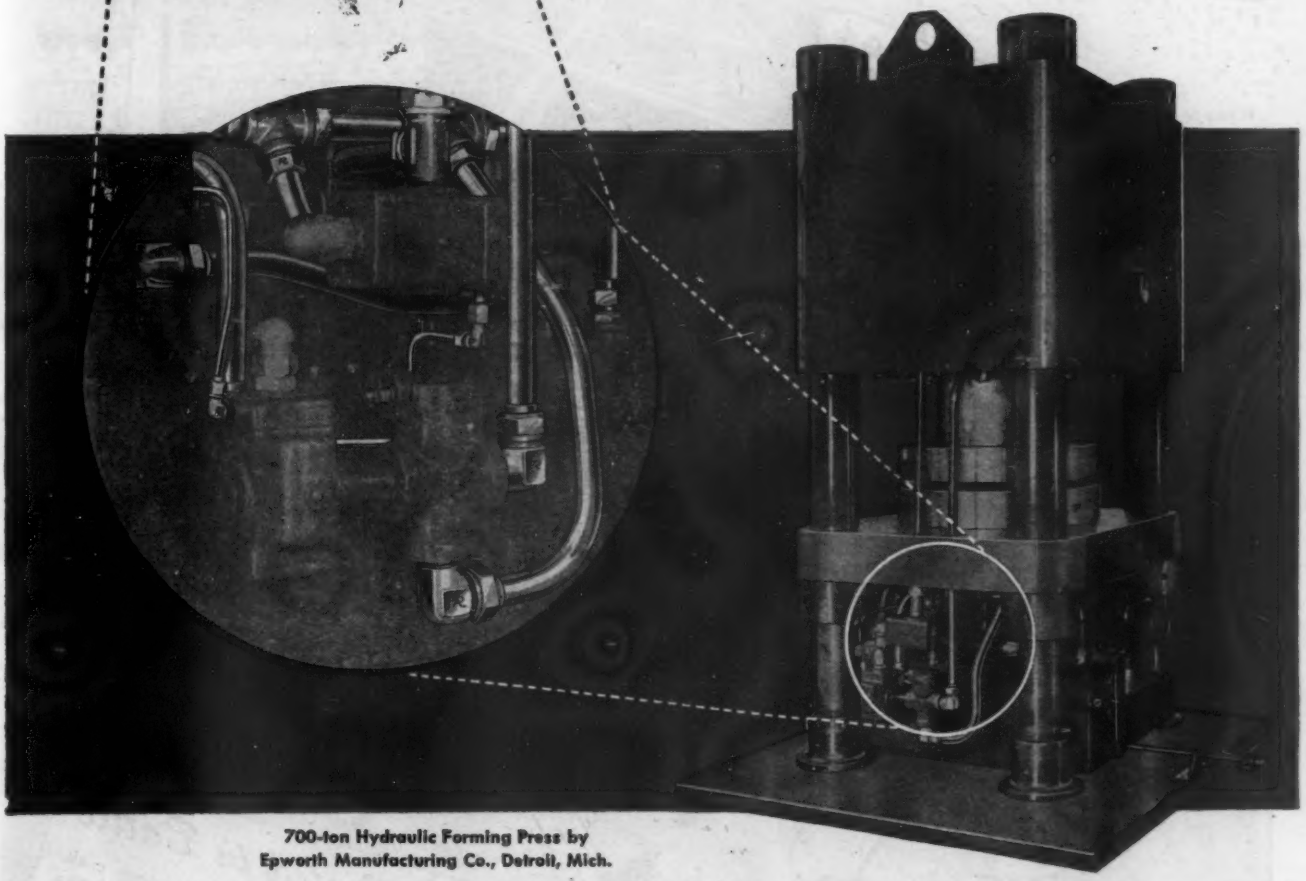
There is only one "if"—the system of tubing, fittings and valves must be properly engineered. Here at Parker we call that job Fluid Power Engineering, and we've been at it for 20 years, on aircraft, motor vehicles, machine tools, refrigeration and process equipment.

A soundly engineered Fluid Power System will have these characteristics:

- It will have streamline flow, to minimize capacity and lessen pressure requirements on the power source.
- It will be compactly designed, to save space.
- All parts will be accessible, for easy and quick service and maintenance.
- It will have the minimum number of joints and connections, to guard against leaks, even under conditions of high pressure, vibration shock, fluid hammer and surge, or accidental abuse.

For the design of such a system, and for the valves, fittings and fabricated parts, or for a simple fluid transmission system, call upon Parker experience.

For your present uses, or for new applications to come, talk with a Parker Engineer, especially in the planning stage. You'll save money, and be more certain of satisfactory results. Write to The Parker Appliance Co., 17325 Euclid Avenue, Cleveland 12, Ohio.



700-ton Hydraulic Forming Press by
Epworth Manufacturing Co., Detroit, Mich.

THE PARKER APPLIANCE CO.

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You're On The Right Track When You Use FABREEKA

Used in many types of track applications, FABREEKA reduces maintenance time and costs because it cushions destructive impact and also absorbs transmitted vibration.

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Write for our Engineering Book: Fabreeka for Impact Shock, Vibration and Noise.

FABREEKA PRODUCTS CO., INC.
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Used in RAILWAY PASSENGER CARS, Trucks and Platforms . . . LOCOMOTIVES, Steam and Diesel Electric . . . TRACK CONSTRUCTION, on Bridges, Crossings, Curves, Turntables and Track Scales.

Tested in Battle

In tanks, trucks, landing craft, planes, submarines, guns and many other applications FABREEKA has performed a useful and important service for our Armed Forces.

INDUS

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...REEKA

...s of track ap-
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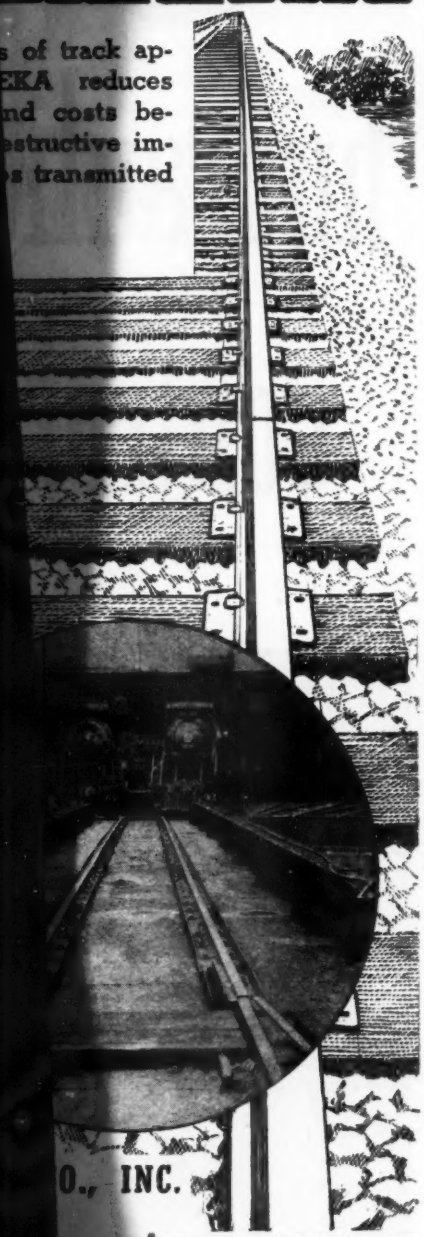
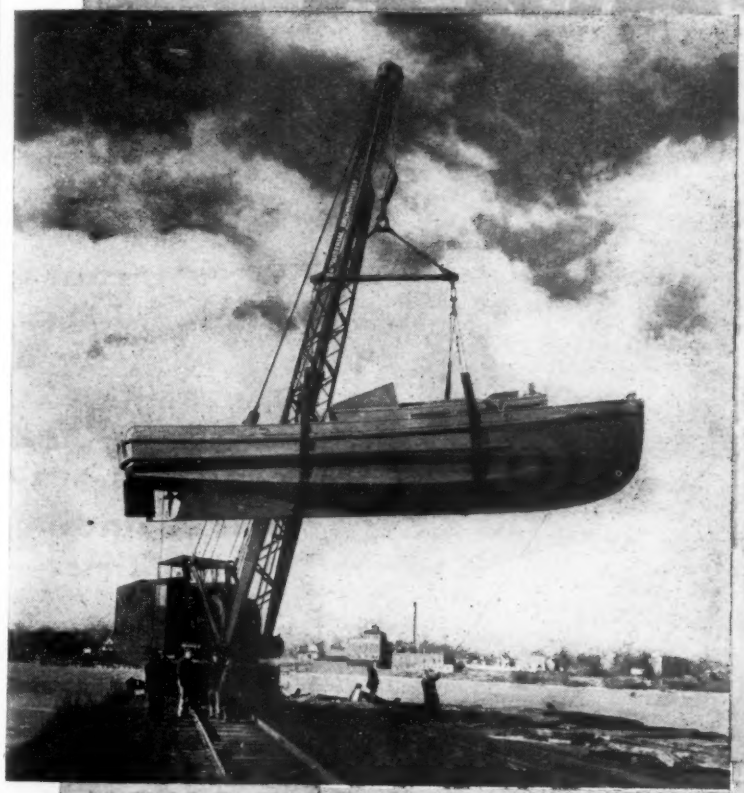


...O., INC.

...sted in Battle

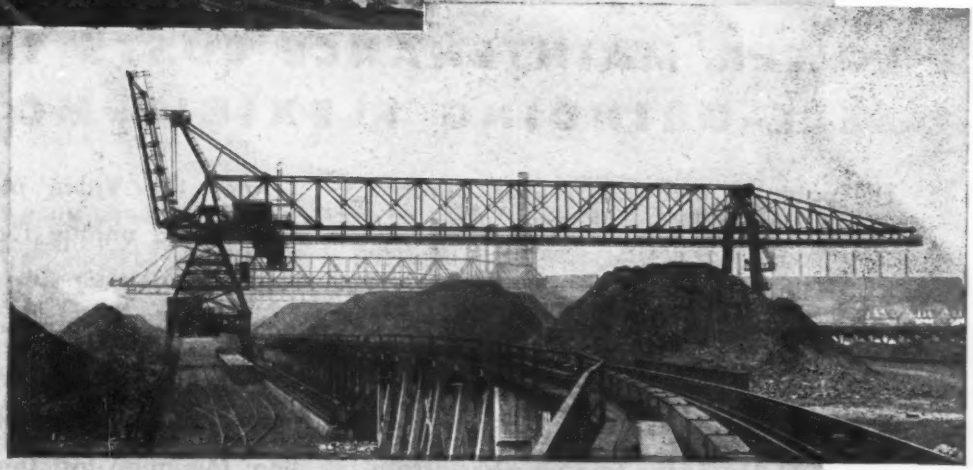
...n tanks, trucks, landing craft, planes, submarines, guns and many other applications FABREEKA has performed a useful and important service for our Armed Forces.

on the waterfront—or inland—I. B. Equipment is doing a top-notch job of material handling



From Atlantic docks to Pacific ports, and at practically every major industrial point in between, Industrial Brownhoist cranes, car dumpers and coal and ore bridges are speeding production schedules—slashing man hours—with their swift, economical handling of heavy, bulky materials. At left is shown an I.B. 40-ton Diesel Locomotive Crane which easily swings an army craft from water to flat car after trial run. Note patented Monitor-type cab which allows operator 360° visibility.

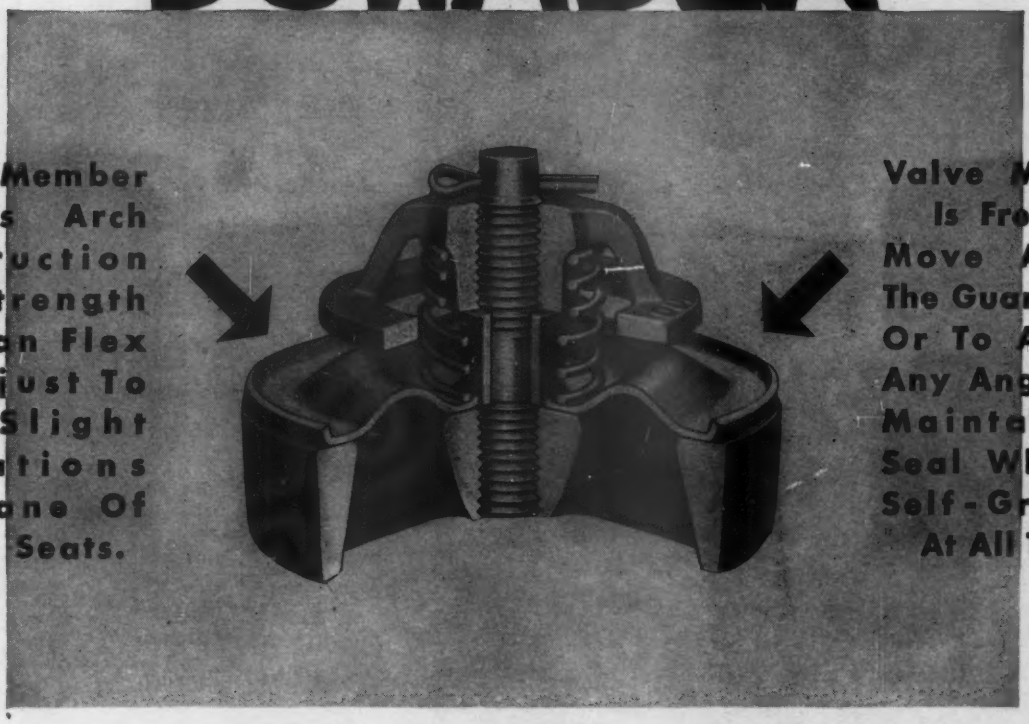
Right: I.B. 17-20 Ton Traveling Ore Bridge with 344 ft. bridge span and raisable apron extending 114 ft. from pier leg center line on dock side.



No matter where or what your material handling problems are, get the facts first from Industrial Brownhoist Corp., Bay City, Michigan. DISTRICT OFFICES: New York, Philadelphia, Cleveland, Chicago • Agencies: Detroit, Birmingham, Houston, Denver, Los Angeles, San Francisco, Seattle, Vancouver, B. C., Winnipeg, Canadian Brownhoist Ltd., Montreal, Quebec.

INDUSTRIAL BROWNHOIST BUILDS BETTER CRANES

DURABLA


Valve Member Utilizes Arch Construction For Strength But Can Flex To Adjust To Any Slight Variations In Plane Of Valve Seats.
Valve Member Is Free To Move Around The Guard-Stem Or To Assume Any Angle And Maintains A Seal Which Is Self-Grinding At All Times

LOWER MAINTENANCE COSTS THROUGH SELF-GRINDING FLEXIBLE MOUNTING

The patented arch construction Durabla Valve Member* retains sufficient flexibility, despite its great strength, so that the valve-to-seat contact maintains a constant pressure-proof seal. The Valve Seat is rigid, the Valve Member is freely mounted. Hence the free member accommodates itself to wear of the valve parts which may occur in severe service.

Since the Valve Member is freely mounted, a unique feature of Durabla engineering, it can turn about the Guard-Stem and a self-grinding pressure-proof seal is always maintained. Lower maintenance costs; Infrequent need for inspection; Minimum lost time for repairs are all achieved through the use of Durabla "The Valve That Grinds Itself."

Address DURABLA Engineering Department for Information and Bulletin No. 9A9

* Patent Numbers 2090486, 2117504

DURABLA MANUFACTURING COMPANY
114 LIBERTY ST. NEW YORK
BRANCHES IN PRINCIPAL CITIES. FOR CANADA REFER: CANADIAN DURABLA LIMITED, TORONTO

CLEARING THE WAY...THAT OTHERS MIGHT ROLL

Bendix-Westinghouse points proudly to thousands of Air Brake and Air Control installations which have performed such a vital role by adding immeasurably to the efficiency and economy of those various units engaged in highway maintenance ★ Although it is a far cry from today's summer sun to the snow-clogged roads of winter, Bendix-Westinghouse accepts this opportunity to congratulate the men who are engaged in this around-the-clock service. Theirs is a Herculean task all too often overlooked and one which shows to such splendid advantage the rugged dependability of genuine Bendix-Westinghouse Controls under the most grueling conditions of operation ★ Naturally your service is different, but it's a safe bet that genuine Bendix-Westinghouse Air Brakes hold many advantages you may be missing ★ Specify this "World Standard of Safety" when ordering new equipment or modernizing units now in service. See your nearest authorized Bendix-Westinghouse Distributor... he's a good man to know and one whose broad knowledge of controls is yours without obligation.

BENDIX-WESTINGHOUSE AUTOMOTIVE AIR BRAKE COMPANY . . . ELYRIA, OHIO

Bendix-Westinghouse

AIR BRAKES

AND PNEUMATIC CONTROL DEVICES

IT IS SIGNIFICANT THAT AMERICA'S FINEST MOTOR TRUCK FLEETS ARE EQUIPPED WITH BENDIX-WESTINGHOUSE AIR BRAKES

FLEXIBLE ARMOR

for STEEL and CONCRETE...

To assure *complete* protection a coating must become an integral part of the surface it covers... expanding, contracting, moving with the structure itself.

Bridges, piers, tanks, smoke chambers, abutments and piling ...they all need the flexible armor protection that Flintkote offers.

This asphaltic-base coating resists cinder abrasion, corrosive locomotive blast, acid-forming seepage and weather. It *seals out* corrosion, and puts a tough, resilient surface between the structures and flying cinders. The base materials *cannot* erode when protected by Flintkote.

This elastic armor is easy and quick to apply... and one "plating" lasts for years. It will not sag or flow under heat or crack from cold. The cost is truly economical.

Behind Flintkote Products are more than 40 years of experience ... painstaking development work to assure that each product bearing the Flintkote name is more than adequate for the job it was designed to do. Write for complete information.

FLINTKOTE INDUSTRIAL PRODUCTS

THE FLINTKOTE COMPANY

30 ROCKEFELLER PLAZA, NEW YORK 20, N. Y.

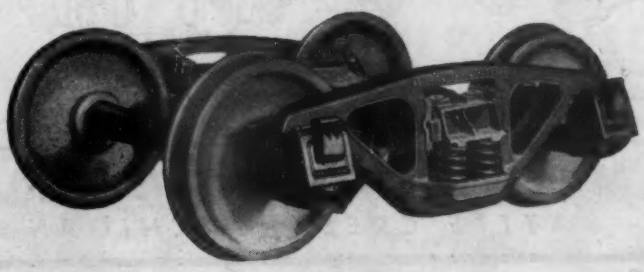
Industrial Products Division

Atlanta • Boston • Chicago Heights • Detroit • Los Angeles • New Orleans
Washington • Montreal • Toronto

An easy-riding freight-car truck at every speed and load should have long spring travel and proper control of spring action. Both of these needs are fully met by the A.S.F. Ride-Control Truck (A-3), over 12,000 car sets of which are already in service or on order.

MINT-MARK OF ⬡ FINE CAST STEEL

A·S·F *Ride-Control* TRUCK



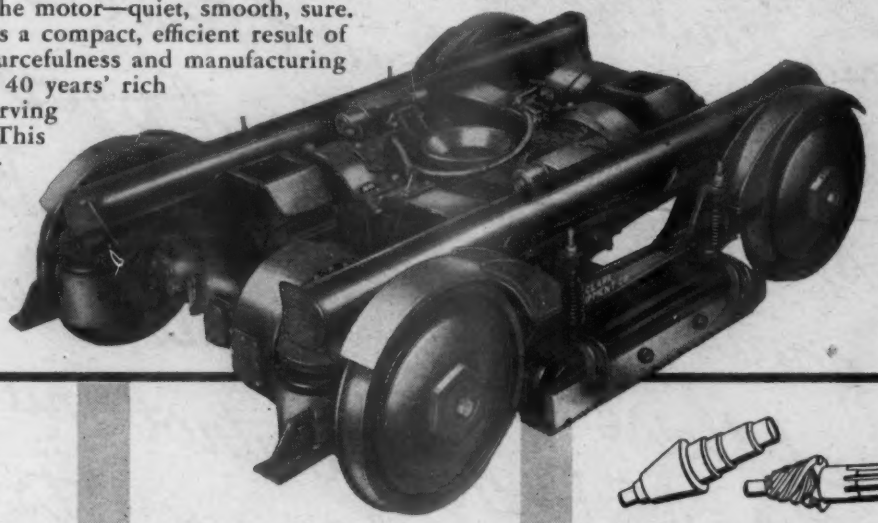
LONG SPRING TRAVEL · CONSTANT FRICTION CONTROL

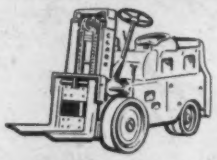
AMERICAN STEEL FOUNDRIES

CHICAGO

COMFORT undreamed of . . .

THERE'S NO PLEASANTER FORETASTE of the delightful comforts Transportation has in store than a ride on Clark Street Car Trucks. Hypoid gears are silent. Wheels are rubber cushioned—unbelievably smooth, noiseless. Springs are soft, comfortable. Brakes are mounted on the motor—quiet, smooth, sure. . . . Here, truly, is a compact, efficient result of engineering resourcefulness and manufacturing "know how", of 40 years' rich experience in serving Transportation. This is the kind of creative usefulness Industry expects of the Men of Clark.





FORK TRUCKS AND INDUSTRIAL TRACTORS

STREET RAILWAY CAR TRUCKS

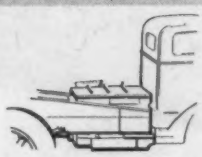
GEARS AND FORGINGS

One piece, forged, heat treated AXLE HOUSING

ELECTRIC STEEL CASTINGS

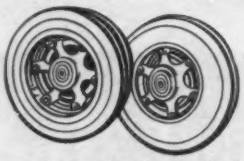
TRANSMISSIONS for Trucks, Busses, Tractors

CELFOR HIGH-SPEED DRILLS AND REAMERS



POWER BOOSTER for 1½-ton Trucks

BLIND RIVETING PROCESS



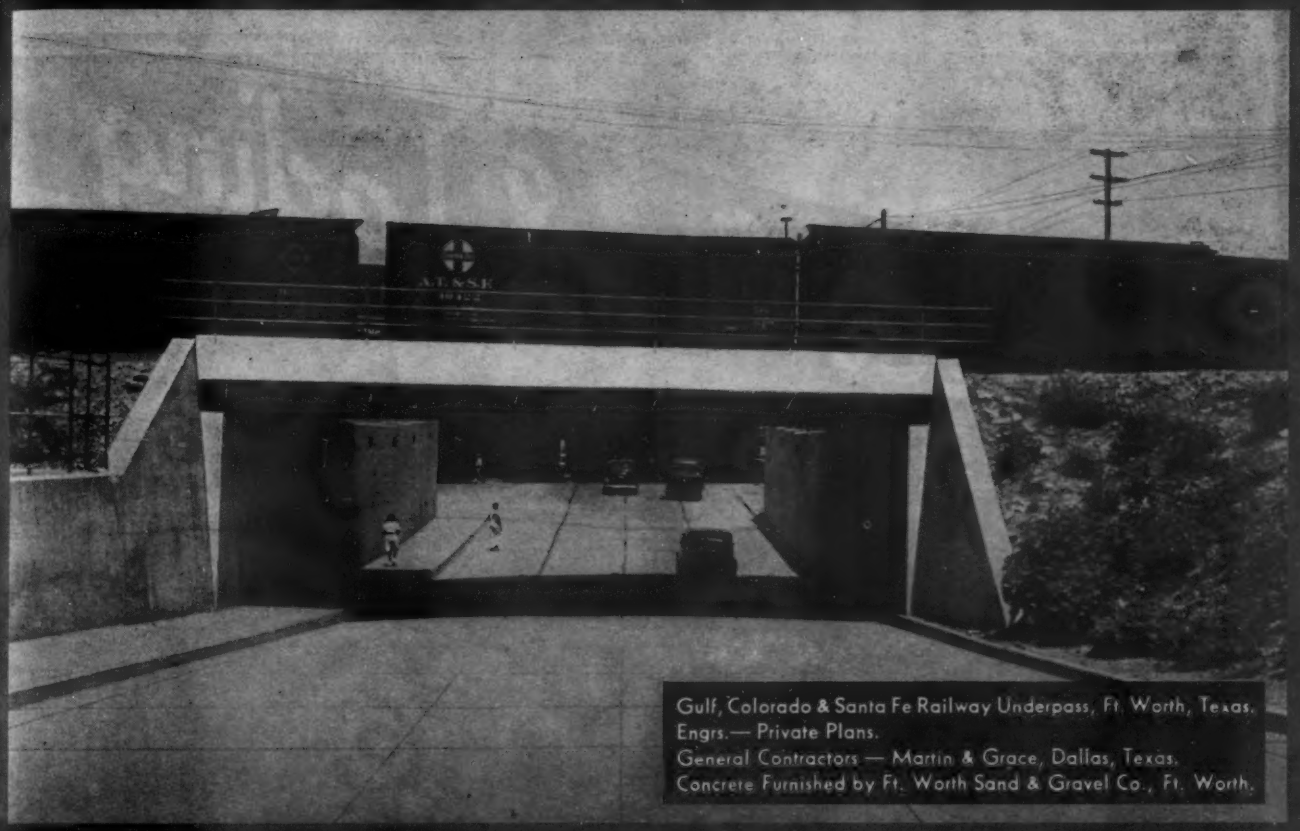
METAL SPOKE-TYPE WHEELS for Trucks, Busses, Trailers

AXLES—front and rear for Trucks, Busses, Tractors

EASY-ROLL TRAILER AXLE

CLARK EQUIPMENT COMPANY

RAILWAY DIVISION - - - BATTLE CREEK, MICHIGAN



Gulf, Colorado & Santa Fe Railway Underpass, Ft. Worth, Texas.
Engrs.— Private Plans.
General Contractors — Martin & Grace, Dallas, Texas.
Concrete Furnished by Ft. Worth Sand & Gravel Co., Ft. Worth.

PLACING PROBLEM SOLVED . . . . .
GREATER DURABILITY IS A PLUS ADVANTAGE

THE contractors on this underpass found that when they used normal concrete with sufficient slump for good placing excessive bleeding resulted. Knowing that *dispersed* cement would produce the desired workability with as much as 15% less water, they used Pozzolith and solved the problem. By reducing the water-cement ratio, strengths were raised substantially.

In doing so they also greatly increased the life expectancy of the bridge. Exhaustive tests conducted by the Nation's top testing authority show that Pozzolith Concrete is 4 to 5 times more durable than plain concrete.

Providing a practical way to obtain much greater durability with higher strength, cement dispersion marks an era of new concrete standards. These higher standards already have been proved in millions of yards of Pozzolith Concrete placed since 1932.

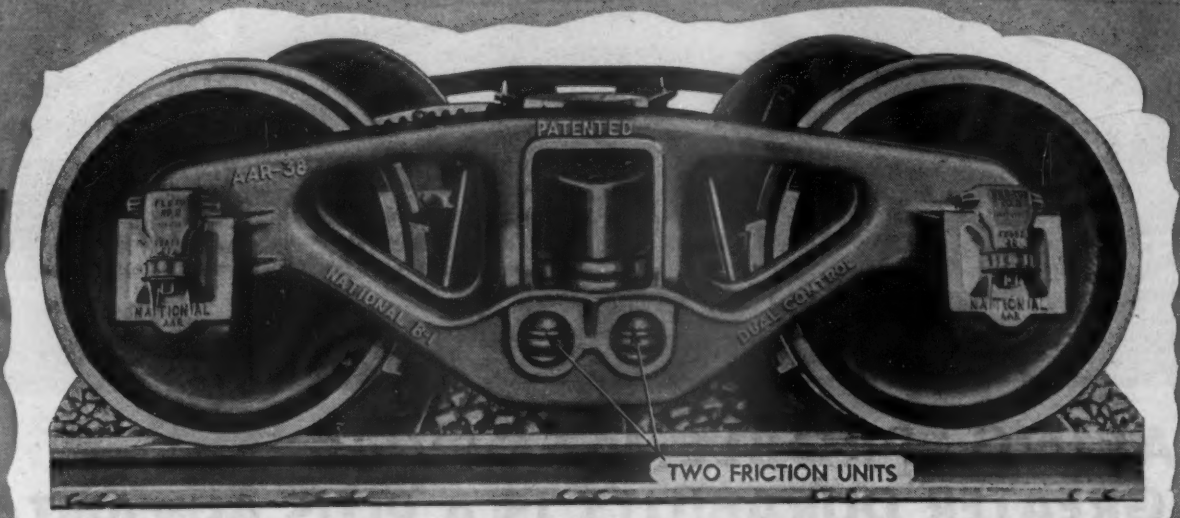
It will pay you to get the facts on Pozzolith, Cement Dispersion for your jobs. Write today.

THE MASTER BUILDERS COMPANY
CLEVELAND 3, OHIO · TORONTO, ONTARIO

The Trend Is Toward . . .

POZZOLITH
CEMENT DISPERSION

Protect Car & Lading by DUAL CONTROL



Designed for Smooth Riding and Safety at any speed, whether light or loaded.

NATIONAL B-1 TRUCKS WITH DUAL CONTROL not only protect the lading, but prolong the life of cars, rail structure and roadbed.

Four friction elements built into each truck control both vertical and horizontal oscillations, and make separate snubbers unnecessary.

Standard or special springs are optional.

No Spring Plank—Fewer Parts—Quick Wheel Change

NATIONAL MALLEABLE AND STEEL CASTINGS CO.

General Offices: CLEVELAND, OHIO

Sales Offices: New York, Philadelphia, Chicago, St. Louis, San Francisco

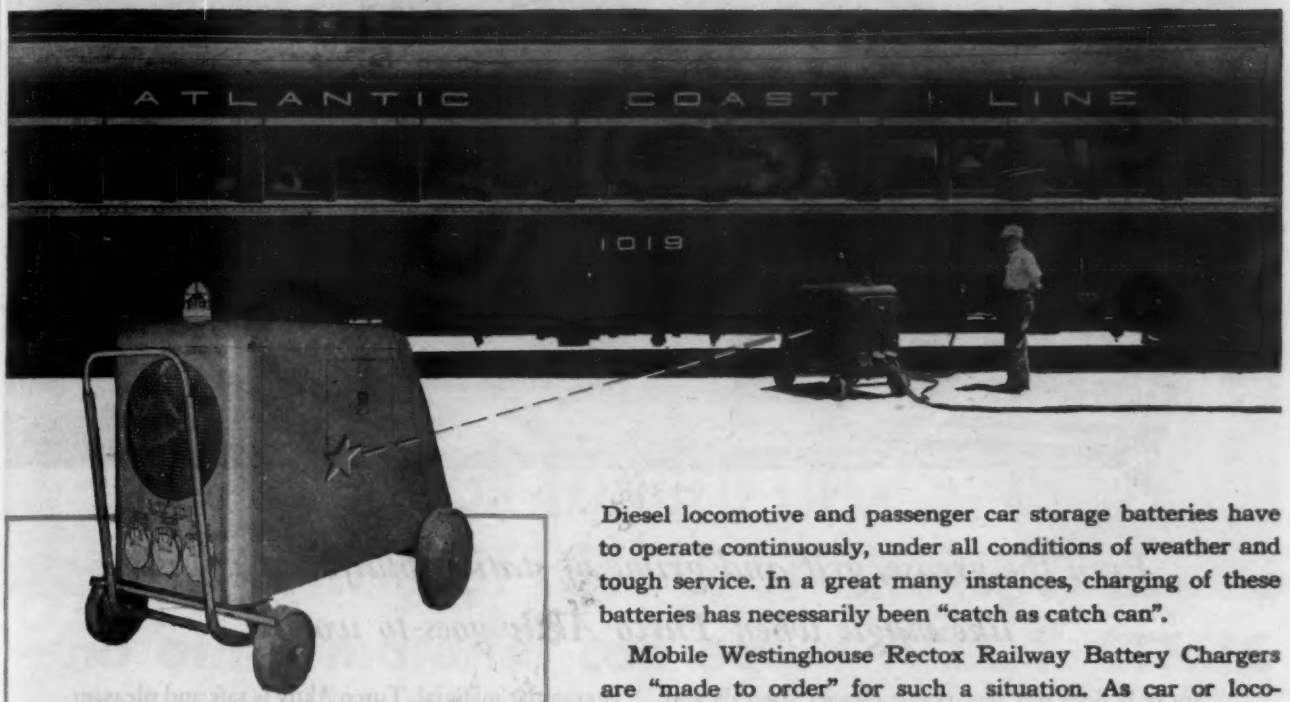
Works: Cleveland, Chicago, Indianapolis, Sharon, Pa., Melrose Park, Ill.

***Canadian Representatives*, Railway & Power Engineering Corporation, Ltd., Toronto and Montreal**

RECTOX BATTERY CHARGER

Meets all Trains

FOR A FULL-CHARGE *IN THE YARD* OR A BOOSTER-CHARGE ON A SHORT "LAYOVER"



RECTOX Offers All These Advantages

ADAPTABLE—Automatic or nonautomatic types available; for either Diesel locomotives or passenger car batteries.

ROLLS FROM CAR TO CAR—Its narrow width permits use between adjoining tracks. Low center of gravity minimizes danger of tipping. Has parking brake.

DEPENDABLE AND "TROUBLE-FREE"—over an unlimited life, with low maintenance.

ECONOMICAL—High charging efficiency, particularly on 50% to 75% load, lowers power costs.

SAFE—Thermal-overload protection; battery circuit fused.

A RECTOX COPPER OXIDE DISC

The Rectox plate assembly is composed of a series of large copper oxide plates, 4⅜" x 12" assembled on an insulated bolt. Rectox Rectifiers, installed more than 16 years ago, continue to give dependable operation.

Diesel locomotive and passenger car storage batteries have to operate continuously, under all conditions of weather and tough service. In a great many instances, charging of these batteries has necessarily been "catch as catch can".

Mobile Westinghouse Rectox Railway Battery Chargers are "made to order" for such a situation. As car or locomotive rolls to a stop, the Rectox charger is rolled up—is plugged into the 230-volt, 3-phase, 60-cycle, a-c outlet, also plugged into the battery . . . the selector and tap switches set, and the battery is immediately "on charge".

Car or locomotive *standing time* becomes Rectox *charging time*—from short boost to full seven to eight-hour charge.

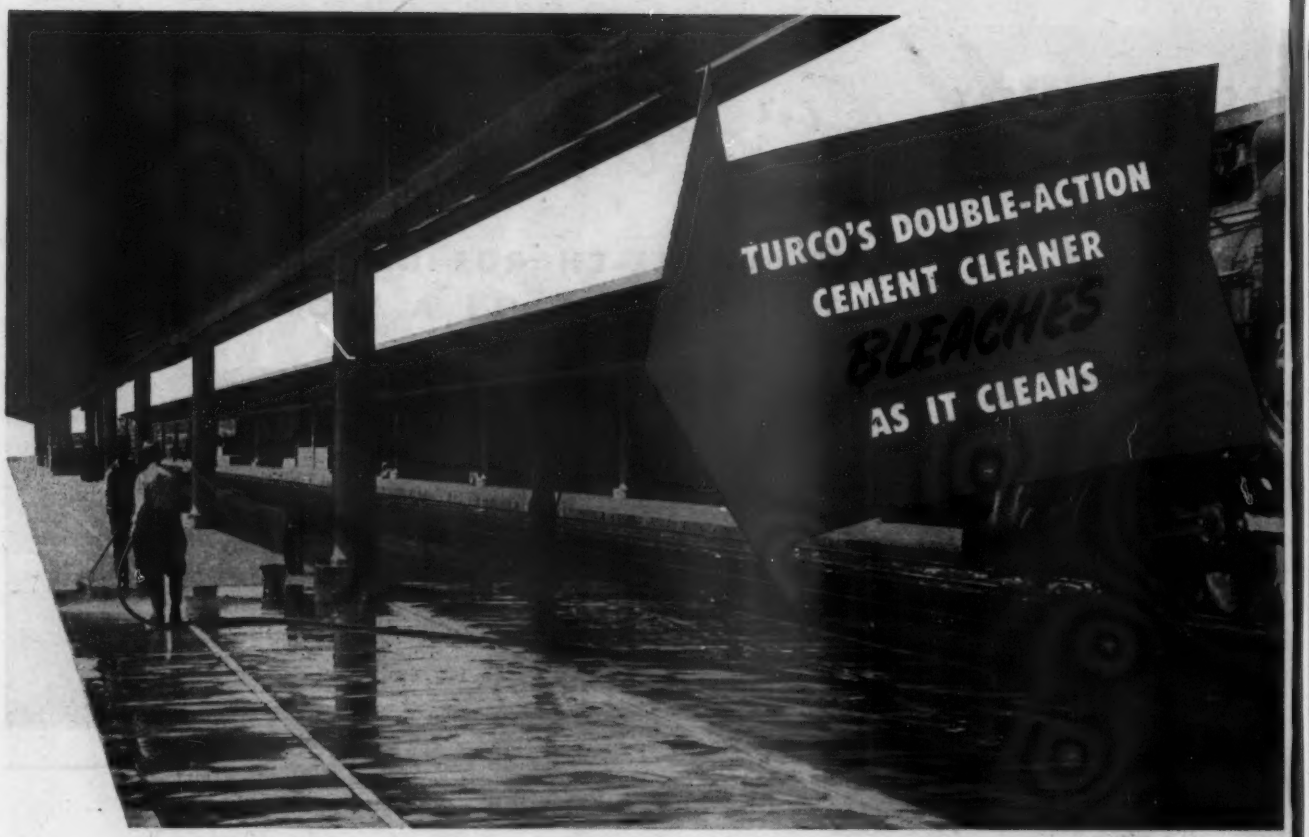
The nonautomatic type is for manual control, boost charging.

The automatic type has a temperature compensated voltage relay for two-rate charging of lead-acid batteries. Nickel-Alkaline batteries are charged by the modified constant current system. An adjustable time switch automatically terminates the charge.

Another invaluable Westinghouse contribution to modern railroading, Rectox is timesaving, battery-saving and moneysaving. For complete information call your nearest Westinghouse office or write Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa. J-21354

Westinghouse
PLANTS IN 25 CITIES . . . OFFICES EVERYWHERE

Rectox RAILWAY BATTERY CHARGERS



Even the grease, grit and grime of station platforms vanish like magic when Turco Aktiv goes to work . . .

Not only does this remarkable cleaner speedily and thoroughly emulsify grease and oil, but it also provides, under continued use, a bleaching action that will make cement floors, walks and platforms gleam.

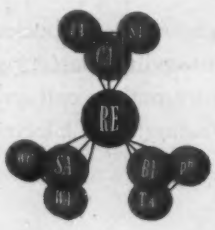
Through *Surface Chemistry,** Turco Aktiv penetrates deeply into pores and cracks which are ordinarily uncleanable. The dirt is brought to the surface where cold water will flush it away without a trace.

Aktiv is easily and quickly applied without scrubbing or scraping. A mop, a bucket and a hose are all the equipment you need.

A granular material, Turco Aktiv is safe and pleasant to use. Since it dissolves completely in water, it may be made into a stock solution for immediate use. Or sprinkle Aktiv on a wet cement surface and, in a few minutes, lightly work it into cracks and rough spots with a broom or brush. Then hose it off or mop with clear water and—one of the toughest, hardest cleaning jobs is easily and quickly done.

Aktiv is inexpensive. Let a Turco Field Representative demonstrate Aktiv on the dirtiest, toughest cement surface in the place. Write Turco, Dept **RA-9.**

**This is Turco Surface Chemistry*



Surface Chemistry is the scientific balance and application of these cleaning factors to a specific problem.

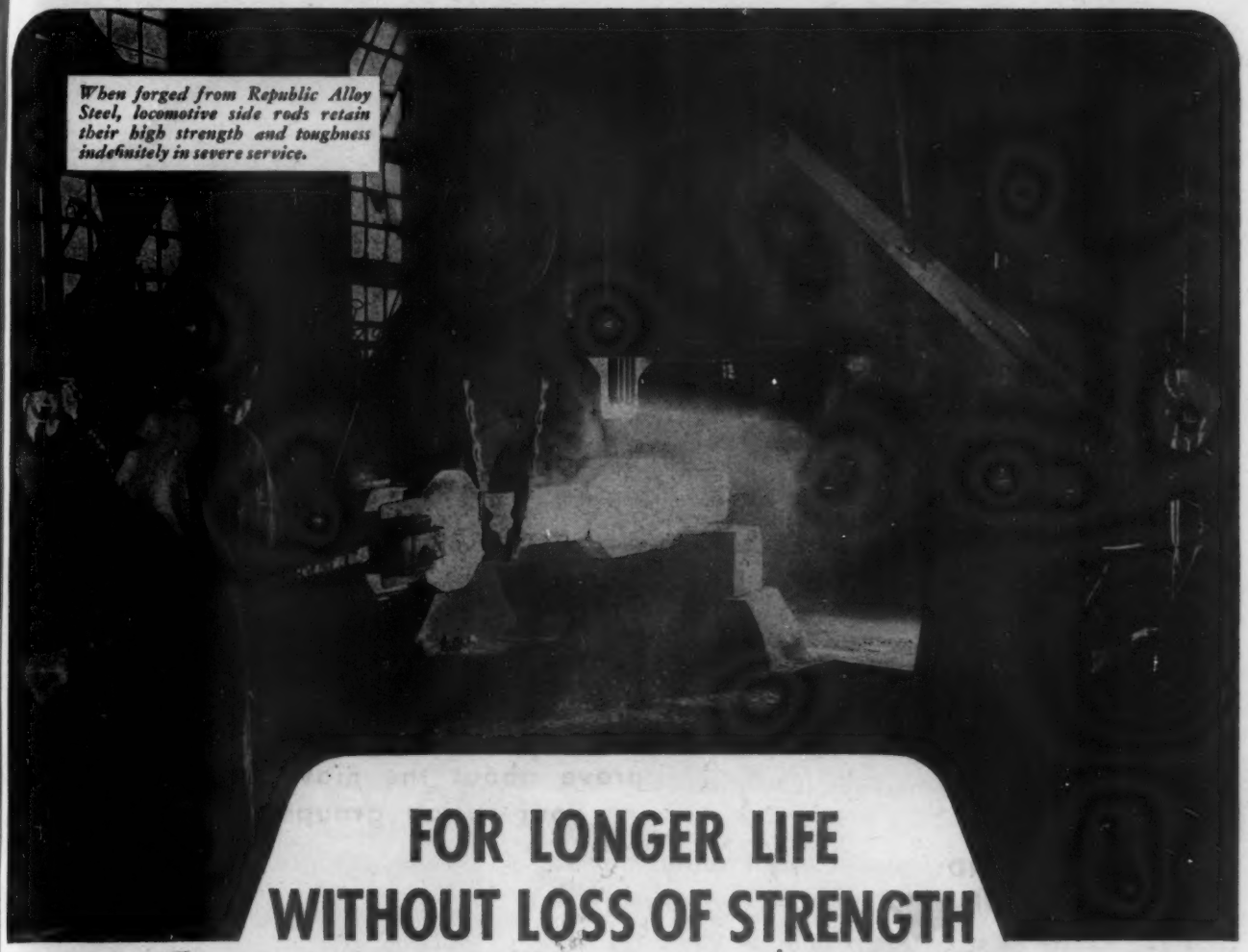
WA—Wetting Action
EA—Emulsifying Action
SV—Saponifying Value
SA—Solvent Action
CA—Colloidal Activity
WC—Water Conditioning
BI—Buffer Index
pH—Energy of Alkalinity
TA—Total Alkalinity
RE—Research and Experience, the combining factor that puts all the above elements into balance and to work on your specific problem.

© 1944 TURCO PRODUCTS, INC.

TURCO

INDUSTRIAL CLEANING COMPOUNDS

TURCO PRODUCTS, INC. Main Office & Factory: 6135 S. Central Ave., Los Angeles 1
Offices & Factories: 125 W. 46th St.- Chicago 9 - 1606 Henderson St., Houston 1, Texas
New York Office: 415 Greenwich St., New York 13 - Offices & Warehouses in All Principal Cities



When forged from Republic Alloy Steel, locomotive side rods retain their high strength and toughness indefinitely in severe service.

FOR LONGER LIFE WITHOUT LOSS OF STRENGTH

—no other material can equal ALLOY STEELS

One of the most important reasons why you should use alloy steels for vital parts of locomotives, cars and other equipment is the inherent ability of these steels to retain their original strength under the most severe conditions.

As examples, consider locomotive side rods, in which sudden reversal of stresses continually attempts to cause failure through fatigue . . . or engine bolts which must absorb varying concentrations of stress . . . or engine pins which must resist severe shocks and strains even when operating in sub-zero cold.

Alloy steels provide *LASTING* strength to assure year-after-year safety in operating parts—to assure longer life and lower maintenance costs. And, in addition, they afford highest strength-to-weight ratios, uniform hardness, extreme toughness, and resistance to corrosion and high temperatures.

Republic—world's leader in the production of alloy steels—is ready NOW to help you select the most effective and economical analysis for each application. Write us.

REPUBLIC STEEL CORPORATION

Alloy Steel Division • Massillon, Ohio

GENERAL OFFICES • • CLEVELAND 1, OHIO

Export Department: Chrysler Building, New York 17, N. Y.

Republic

ALLOY STEELS

Also Carbon and Stainless Steels—Sheets, Plates—Pipe—Upset Rods, Nuts and Rivets—Electric Resistance Boiler Tubes

"the moving finger writes": the story of Bolster Spring Group Action!

This is what Oscillation Curves prove about the movement of your spring groups in operation.

A.A.R. STANDARD SPRING GROUP

HOLLAND SNUBBER SPRING AND 3 A.A.R. SPRINGS

Style A-6-A Holland Volute Snubber Springs

HOLLAND COMPANY

332 SOUTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

1242

LONG, LONG AGO---

Remember those leisurely days when empty freight cars by the hundreds were patiently waiting for days and weeks for their next run?

Times have changed. Now endless trains race their overloads across country without a breathing spell and bearing failure may mean the difference between making and missing port connections.

The wear-resistance and easy-running smoothness of N-B-M Journal Bearings is your best protection from premature lay-offs. Standardize on

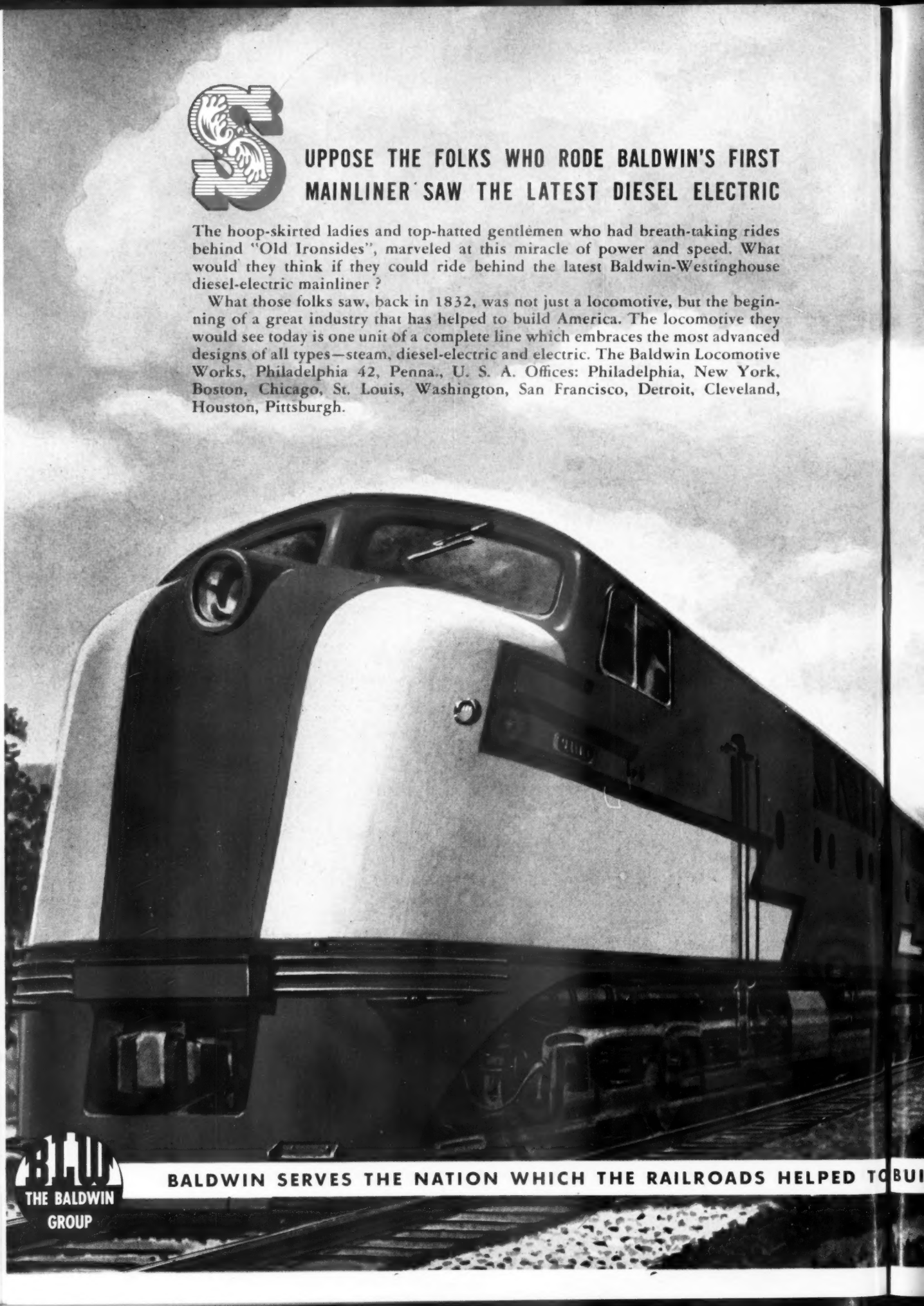
N•B•M
JOURNAL BEARINGS

NBM

NATIONAL BEARING
DIVISION
ST. LOUIS • NEW YORK

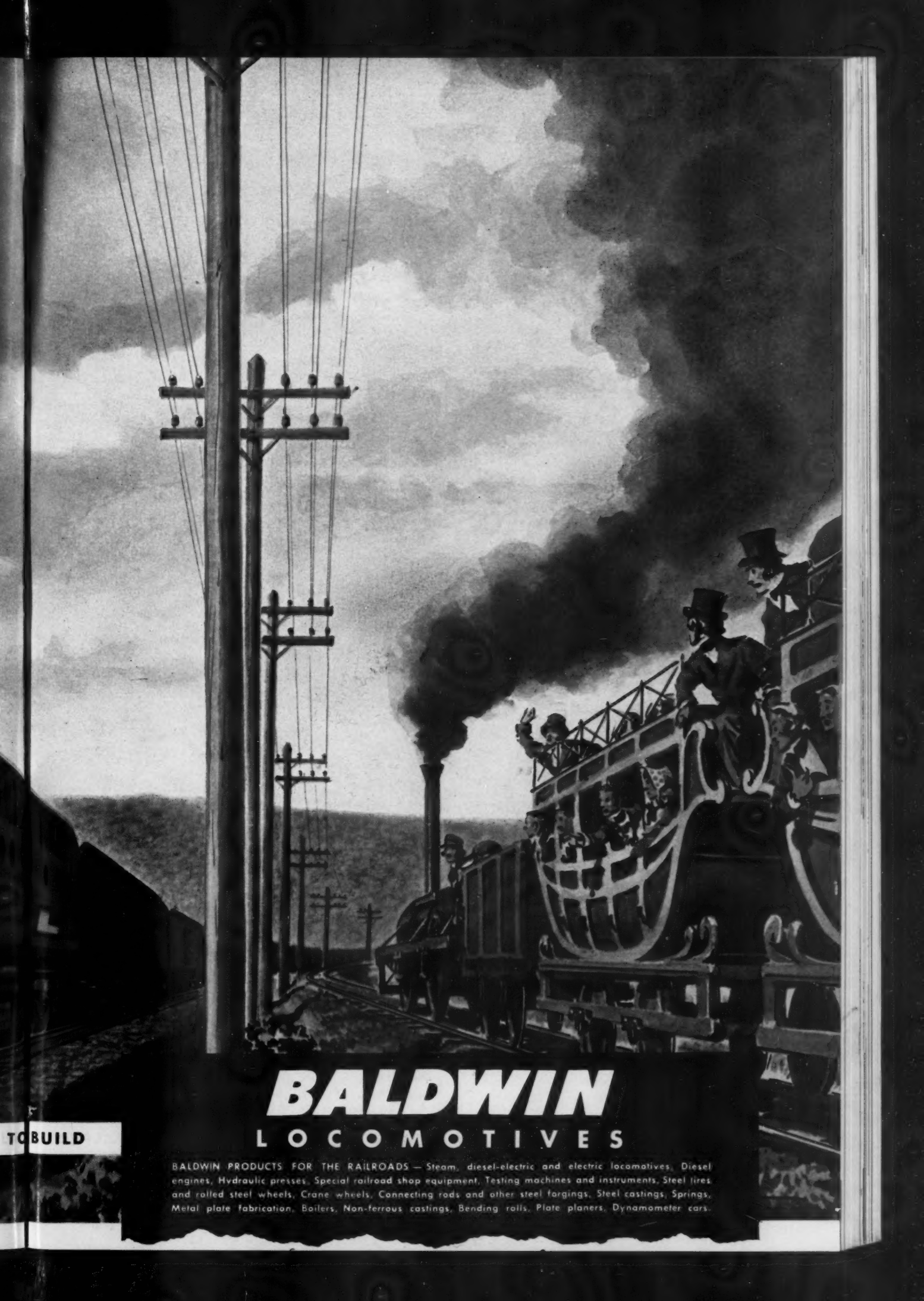
AMERICAN Brake Shoe COMPANY

PLANTS IN: ST. LOUIS, MO. • PITTSBURGH, PA. • MEADVILLE, PA. • JERSEY CITY, N. J. • PORTSMOUTH, VA. • ST. PAUL, MINN. • CHICAGO, ILL.


SUPPOSE THE FOLKS WHO RODE BALDWIN'S FIRST MAINLINER SAW THE LATEST DIESEL ELECTRIC
The hoop-skirted ladies and top-hatted gentlemen who had breath-taking rides behind "Old Ironsides", marveled at this miracle of power and speed. What would they think if they could ride behind the latest Baldwin-Westinghouse diesel-electric mainliner ?
What those folks saw, back in 1832, was not just a locomotive, but the beginning of a great industry that has helped to build America. The locomotive they would see today is one unit of a complete line which embraces the most advanced designs of all types—steam, diesel-electric and electric. The Baldwin Locomotive Works, Philadelphia 42, Penna., U. S. A. Offices: Philadelphia, New York, Boston, Chicago, St. Louis, Washington, San Francisco, Detroit, Cleveland, Houston, Pittsburgh.
BLW
THE BALDWIN GROUP
BALDWIN SERVES THE NATION WHICH THE RAILROADS HELPED TO BUI

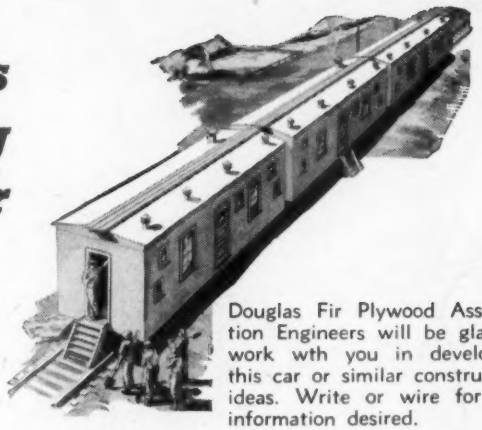
TO BUILD

HELPED TO


BALDWIN
LOCOMOTIVES
BALDWIN PRODUCTS FOR THE RAILROADS — Steam, diesel-electric and electric locomotives, Diesel engines, Hydraulic presses, Special railroad shop equipment, Testing machines and instruments, Steel tires and rolled steel wheels, Crane wheels, Connecting rods and other steel forgings, Steel castings, Springs, Metal plate fabrication, Boilers, Non-ferrous castings, Bending rolls, Plate planers, Dynamometer cars.

Suggested Use of Douglas Fir Plywood in Building a Dining and Lounge Car

THIS DEVELOPMENT IS SUITABLE FOR NEW OR REBUILT CONSTRUCTION—*Fourth of a Series*

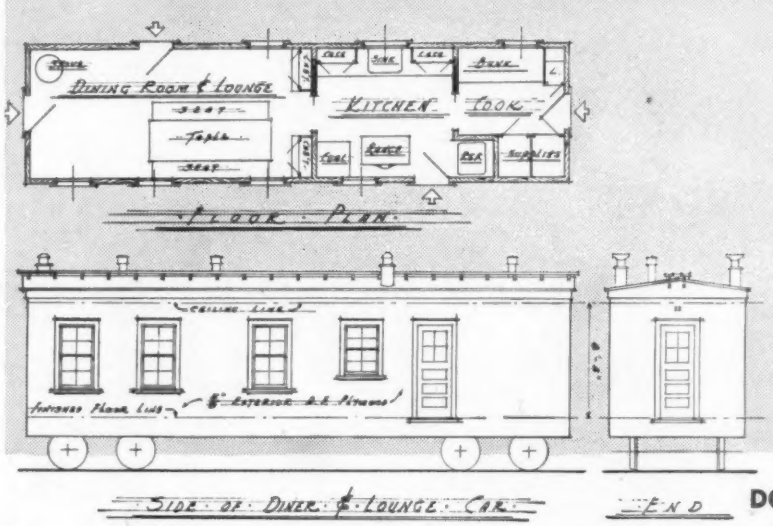


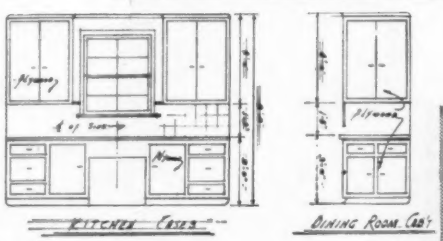
Douglas Fir Plywood Association Engineers will be glad to work wth you in developing this car or similar construction ideas. Write or wire for any information desired.

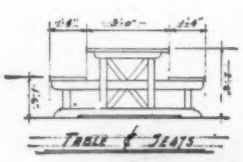
Previous advertisements have shown suggested plans for rebuilding standard 40-foot box cars into a modern three-car camp train and a bay window caboose. Below are suggestions for building a compact and practical diner-lounge car—plans which are again suitable for new or rebuilt construction.

Siding of the car is of 5/8" Exterior type Douglas fir plywood (EXT - DFPA) — the same plywood which has been used so successfully in standard box car, reefer car and troop sleeper construction. Interior is 3/8" Douglas fir plywood. Sliding doors are used between kitchen and dining-lounge area and between kitchen and cook's quarters.

Strong, light in weight, exceptionally durable — Douglas fir plywood is an ideal material for this type of construction. Plywood's panel form speeds installation, reduces the number of seams and cracks, makes cars simpler to heat and freer of drafts. The surface is smooth and attractive, too—and easier to keep clean.







DOUGLAS FIR PLYWOOD ASSOCIATION
Tacoma 2, Washington

PLYPANEL D.F.P.A. TRADE MARK REG. U. S. PAT. OFF.

GENUINE PLYSCORD SHEATHING D.F.P.A. INSPECTED

GENUINE PLYWALL Douglas Fir Plywood WALLBOARD D.F.P.A. INSPECTED

GENUINE DOUGLAS FIR PLYFORM Concrete Form Panel D.F.P.A. INSPECTED

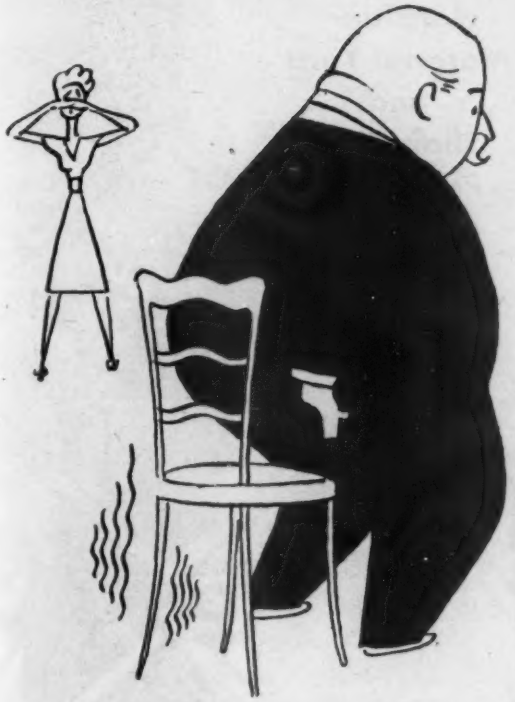
EXT.-D.F.P.A. TRADE MARK REG. U. S. PAT. OFF.

DOUGLAS FIR PLYWOOD
LARGE. LIGHT. STRONG.
Real Wood PANELS

SPECIFY DOUGLAS FIR PLYWOOD BY THESE "GRADE TRADE-MARKS"

IT'S EASY

to shatter a chair...



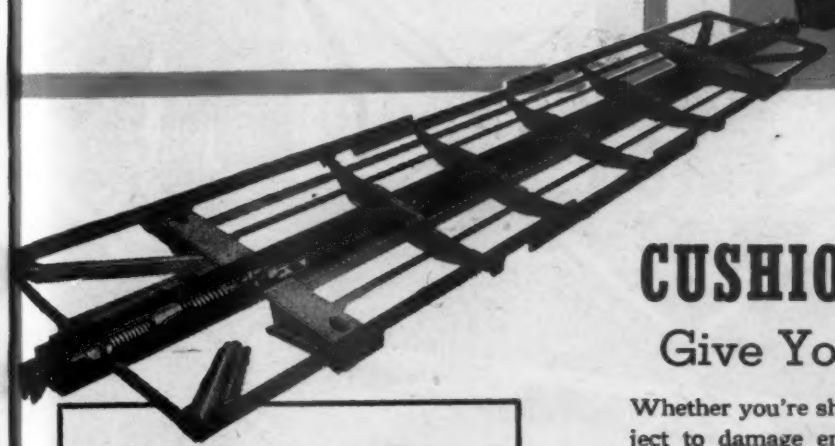
BUT—

A Furniture Shipper

FOUND THE WAY TO SHIP FRAGILE FURNITURE SAFELY IN FREIGHT CARS

—"We have made it a practice to pay particular attention to certain Santa Fe cars that we have used which are equipped with Duryea Underframes and we have noticed that invariably, contents of such cars arrive at destination with little or no damage."

—(from a letter in our files)



DURYEA CUSHION UNDERFRAMES

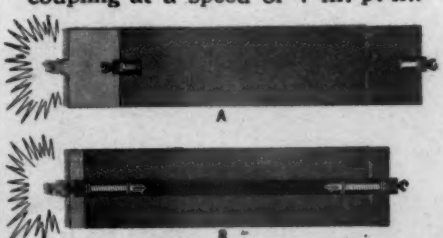
Give You Shockproof Shipping!

Whether you're shipping furniture or *any other* merchandise subject to damage en route, Duryea-equipped cars give you better arrivals, reduced losses. The unique Duryea floating center sill travels the force of any impact the entire length of the car, absorbing it as it goes in big cushion springs—the underframe takes the shock; it is hardly felt in the car.

HOW THE DURYEA CUSHION UNDERFRAME CONTRIBUTES TO VICTORY

PROTECTS car and lading, prolongs car life, cuts damage claims.
PERMITS higher handling speeds.
ELIMINATES gear replacements, maintaining efficiency for life of car.
SAVES TIME loading and unloading. Needs less packing and bracing.
SAVES MONEY usually spent for maintenance on every part of car.
COMPLEMENTS air brake; Duryea cars withstand abrupt stops.
CUTS SLACK to pre-determined ideal.
COSTS NO MORE than conventional type, for average Duryea gear.

Here's what actually happens ... when two stationary freight cars receive the same impact, equivalent to a 50-ton car, loaded to capacity, coupling at a speed of 4 m. p. h.:



CONVENTIONAL CAR (A): Draft gear "goes solid," car receives almost entire impact.
DURYEA CAR (B): Shock absorbed by cushion gears, car and lading are comparatively undisturbed.

O. C. DURYEA CORPORATION
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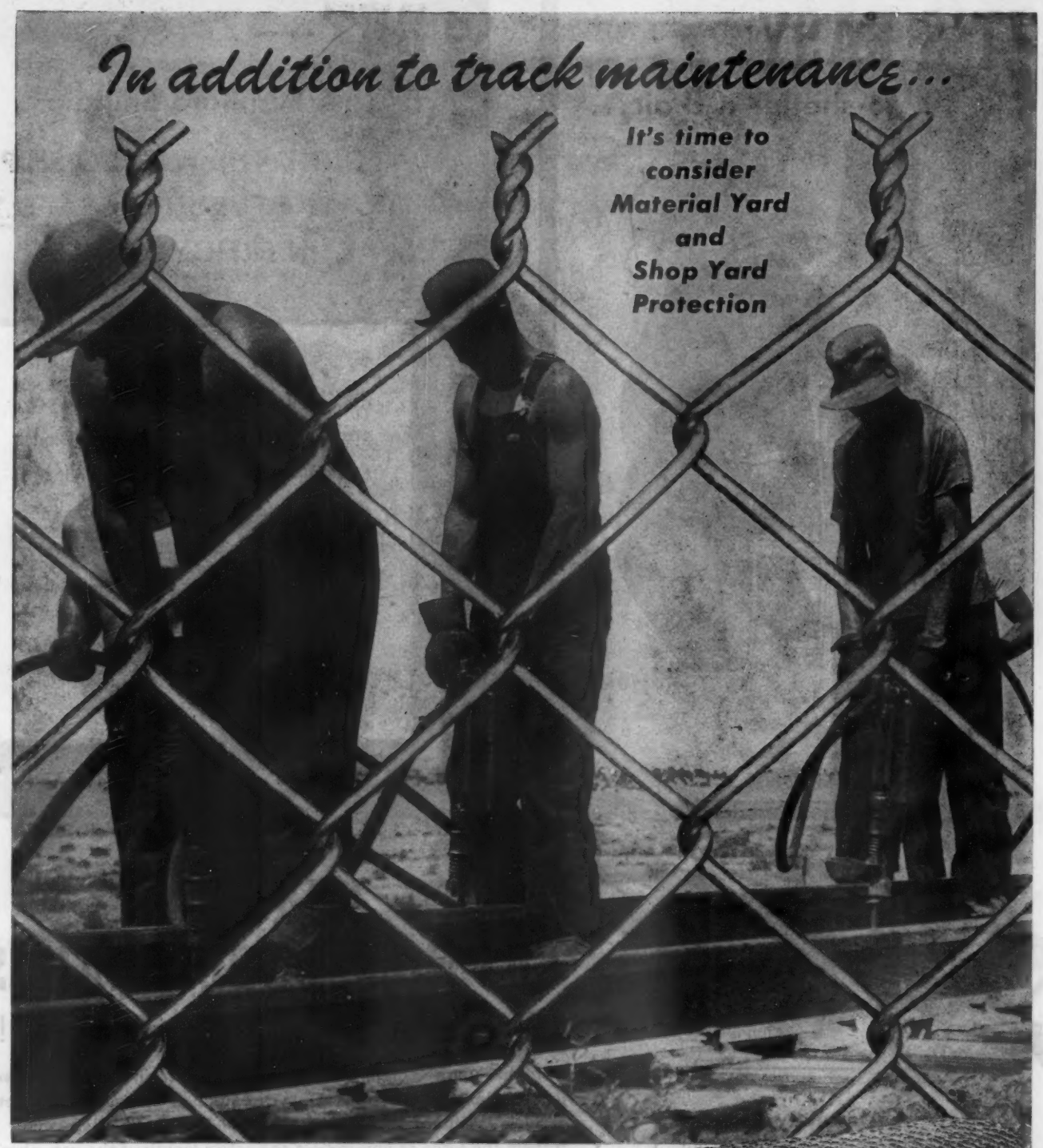

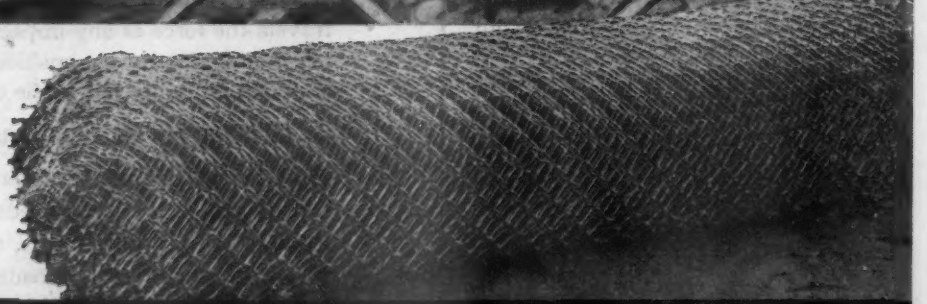

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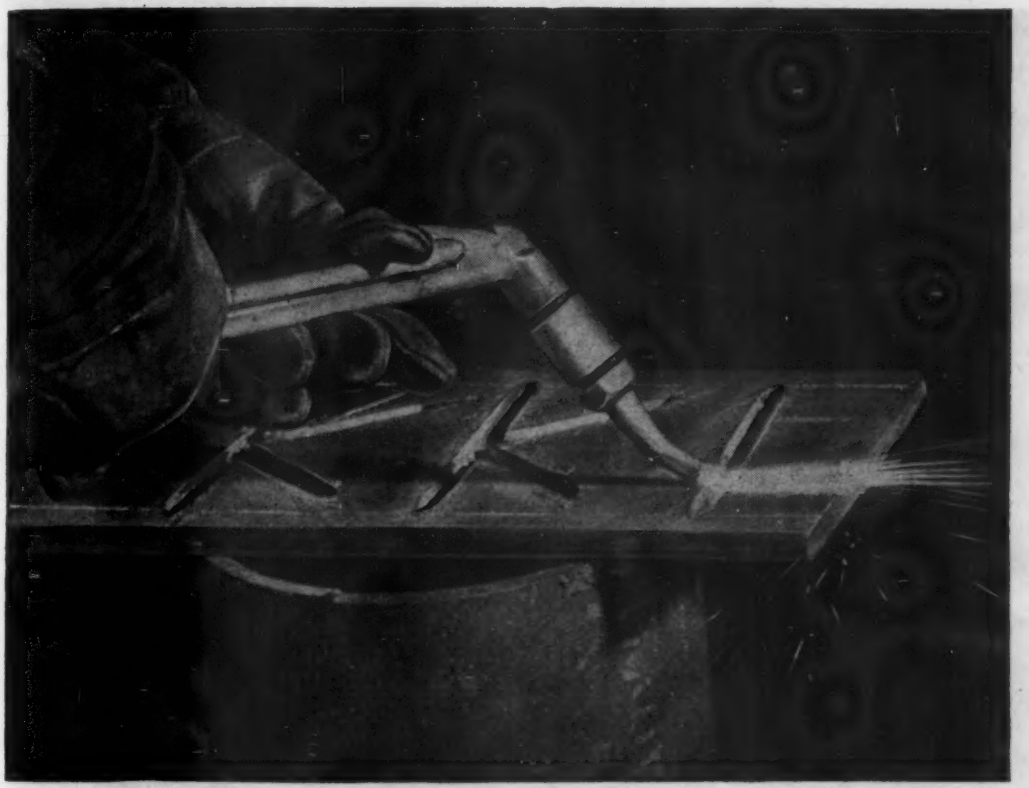

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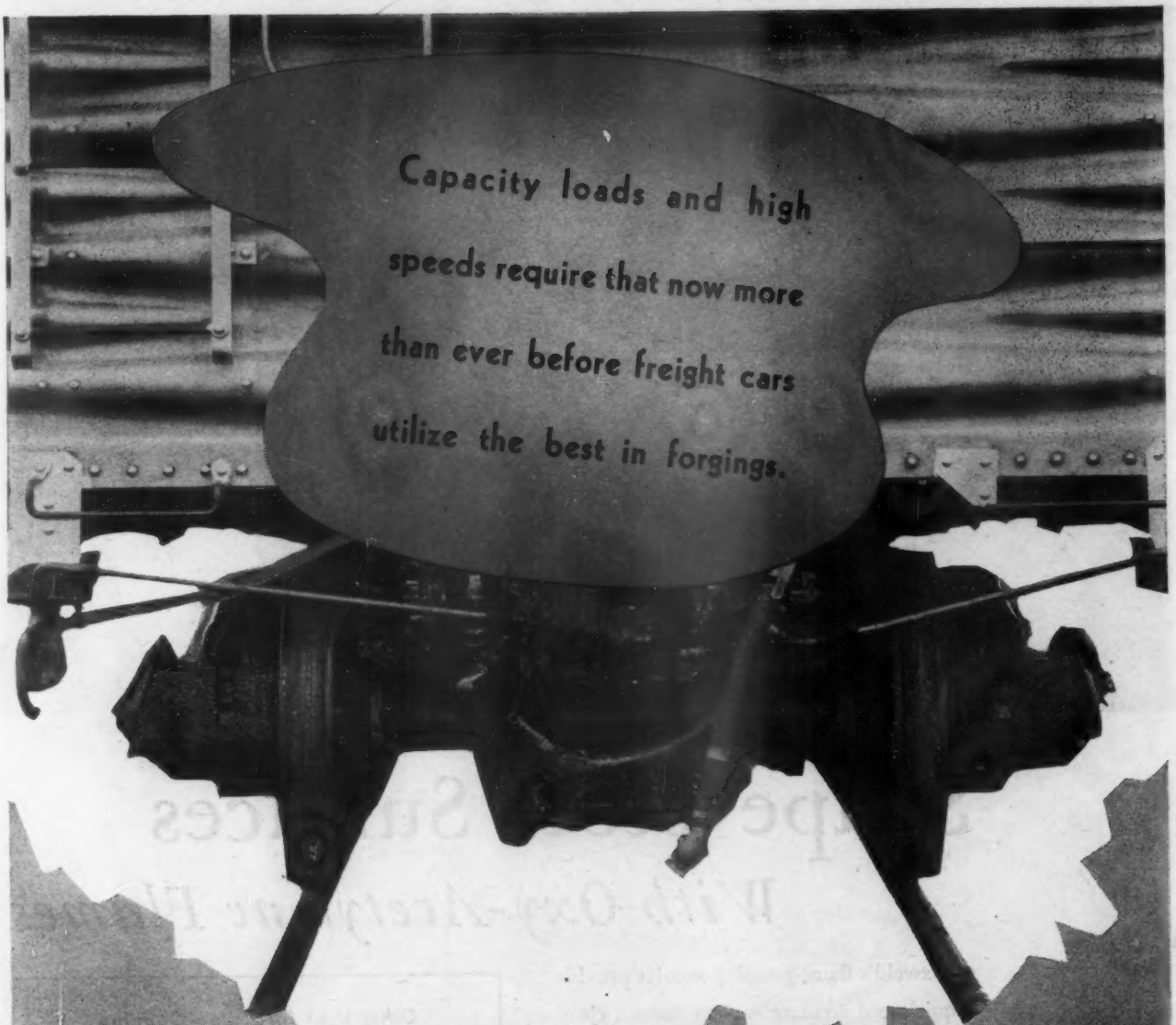

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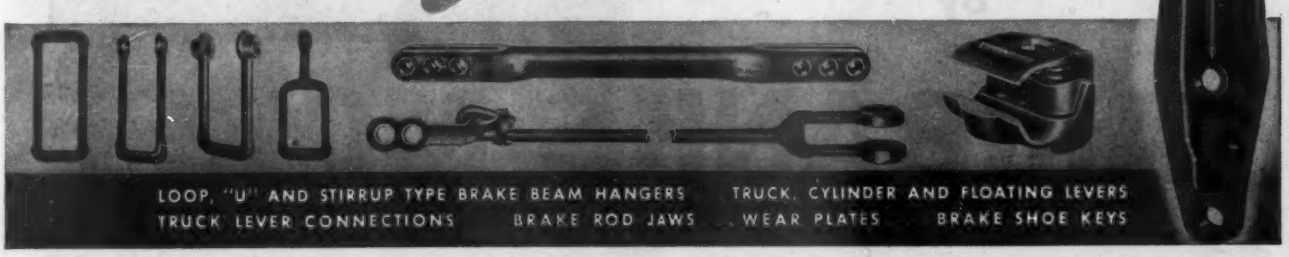
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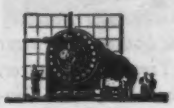
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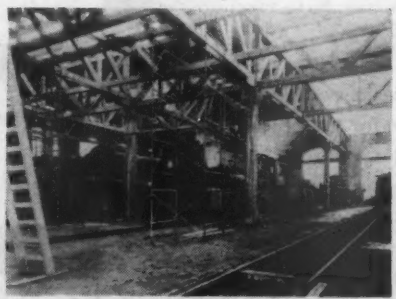

New York Central engine house roof trusses were prefabricated by Timber Structures, Inc. Architect, Engineer: New York Central. Contractor: Duffy Construction Co.

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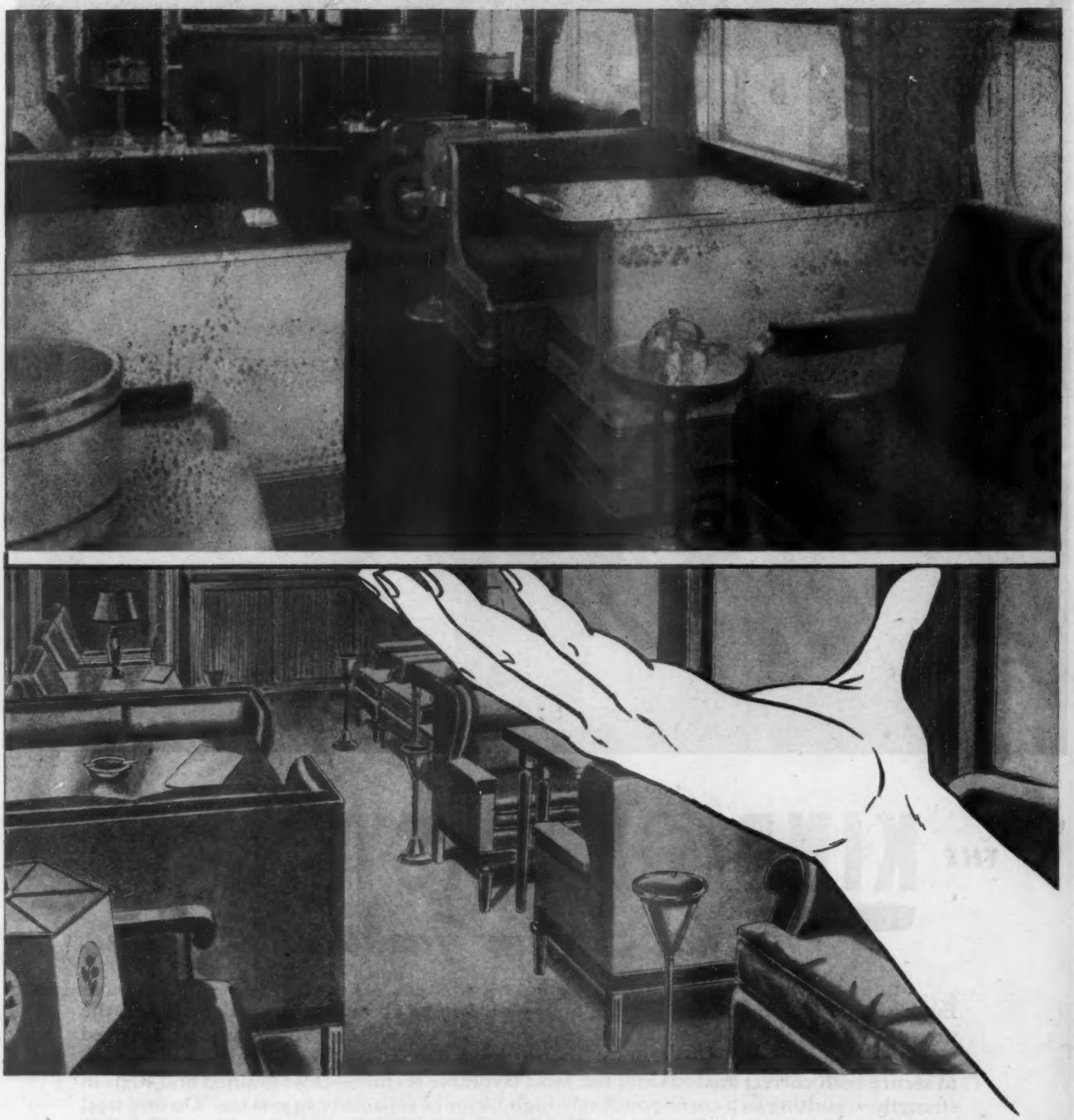

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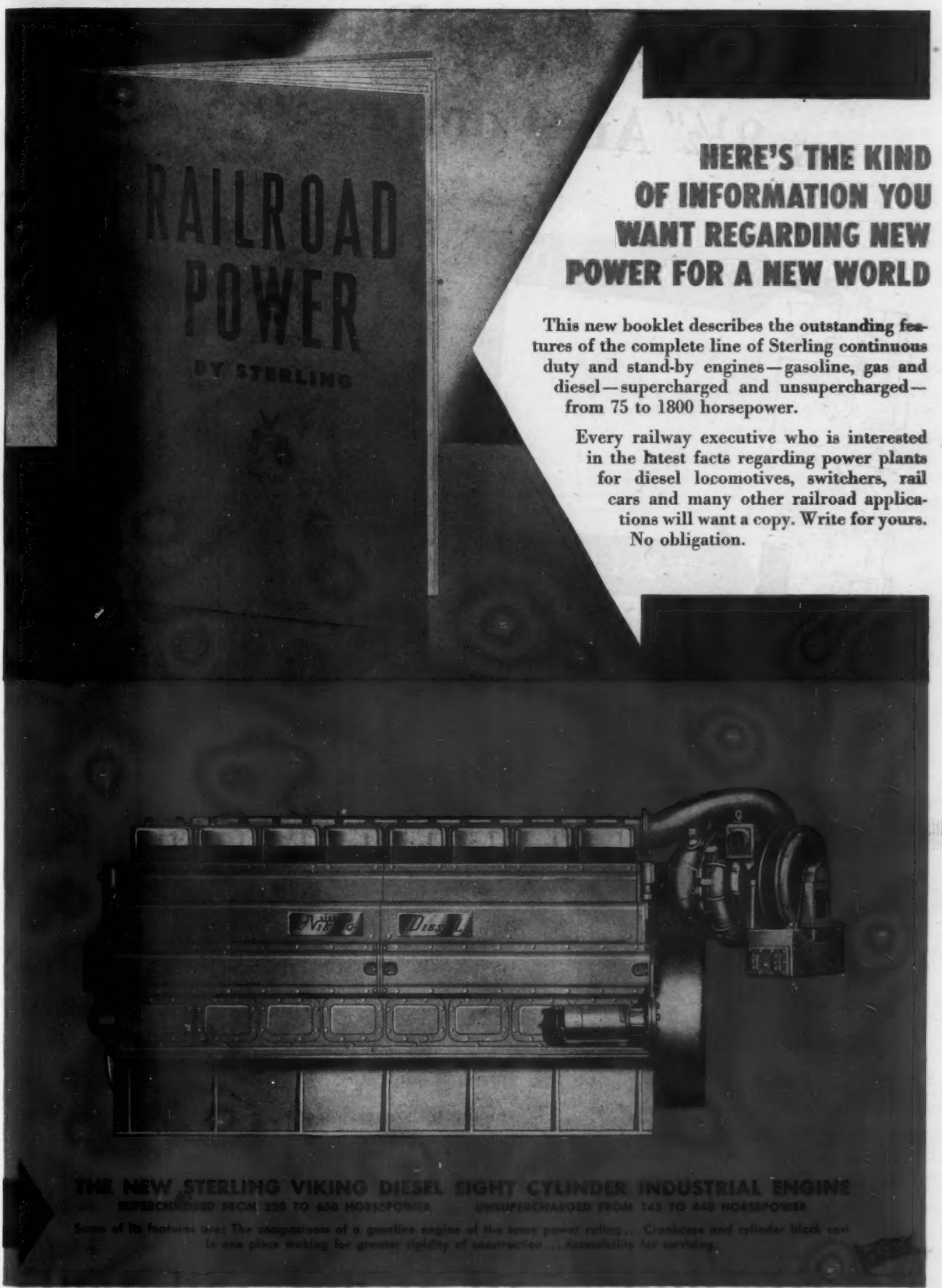

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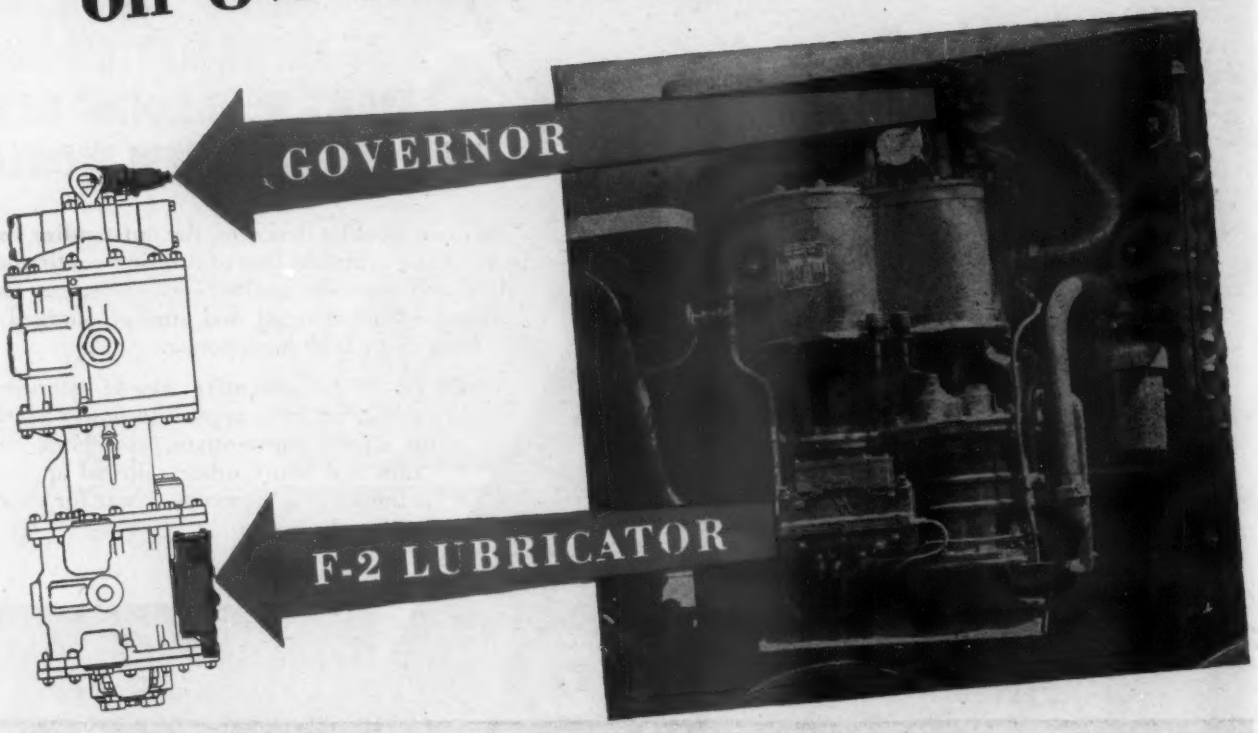

Side View Showing Clearance

This view shows air cylinders with mounting pads for F-2 lubricator as now supplied for replacements. Conversion can be made by applying the lubricator and new top head.

The advantage of dependable, metered lubrication and the all-around improvement in compressor performance that stems from it is not limited to new compressors. The F-2 lubricator as well as the integral-mounted governor can be had for compressors in service by replacing the top head and the air cylinders. As shown by the clearance diagram above, these parts can be added to existing compressors and stay within existing clearances. To facilitate conversion all air cylinders are now made with the mounting pads for the F-2 lubricator.

Westinghouse Air Brake Company

Wilmerding, Pa.

Railway Age

With which are incorporated the Railway Review, the Railroad Gazette, and the Railway Age-Gazette. Name registered in U. S. Patent Office.

Vol. 119 September 22, 1945 No. 12

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Restricted meeting was featured by five technical reports, abstracted herein, by the selection of four honorary members, election of officers and consideration of future plans.

First 4-8-4 on the New York Central 480

Viewed as a major step forward in the progress of the New York Central's equipment engineering department in steam locomotive development, this new design is described and illustrated.

How to Improve Traffic Salesmanship 488

An aggressive and intelligent sales force is indicated for those companies who expect to prosper in the "buyer's market" soon to come in transportation — "At the risk of ridicule," G. Lloyd Wilson of the University of Pennsylvania discusses the controversial subject of salesmanship in transportation.

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The Railway Age is indexed by the Industrial Arts Index and also by the Engineering Index Service

★

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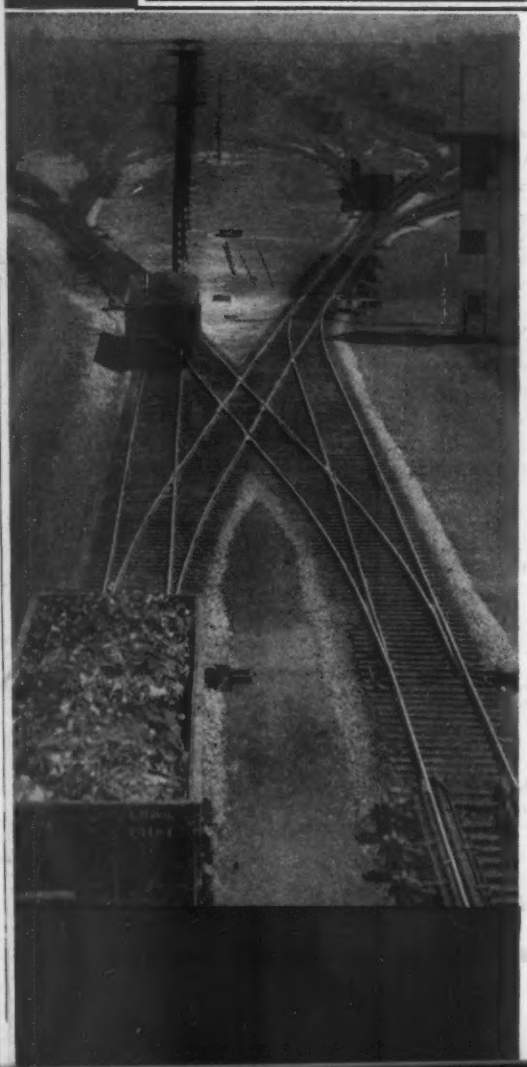
Would this locomotive be at home in your yards?



Locomotive, General, of Civil War days exhibited at the New York World's Fair pageant, "Railroads on Parade." The Bettmann Archive.

In its day, it was just about the last word in speed, power and efficiency. Today it's a museum piece. It still runs, but no railroad could afford to use it.

Yet—many a classification yard is just about as obsolete economically as this 80-year old locomotive.

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The Week at a Glance

ALL TAKE AND NO GIVE: Organized labor on the railroads and in other industries is having a lot to say these days about its "rights." Apparently those rights, in the opinion of union leaders and the politicians who toe labor's line, are paramount to anyone else's rights. Meanwhile, as the leading editorial this week points out, those who have so much to say about labor's rights are significantly quiet about labor's "duty." Management, on the other hand, is not so unaware of its duties—not only to its employees, but also to the public and to the owners of the enterprises it operates—as it is remiss in exercising some of them. Particularly, it has a duty to assert its rights, rather than to leave that form of activity exclusively to labor, and it has a duty to inform public opinion that labor has some duties, too, to go along with the rights that so much has been said about. Until those duties are performed, organized labor will continue to disseminate propaganda exaggerating its "rights" and glossing over the responsibilities that those rights entail.

●

POWER PROGRESS: The latest thing in passenger locomotives on the New York Central twenty years ago developed at high speeds 4,800 indicated horsepower; the latest design today is expected to run that figure up to 6,000. The illustrated feature article in this issue describing this American Locomotive product emphasizes its domeless boiler, deep combustion chamber, large grate area and 86-cu. ft. ash pan.

●

MORE FOR LESS: The "demands" which seven railroad shopcraft unions have decided to serve on their employers—thereby bidding for their portion of flesh (or possibly a little bit more) along with the other brotherhoods—are outlined in the news pages herein. In brief, they want a six-hour day and a six-day week, with a 33⅓ per cent increase in hourly wages, so as to maintain the standard of living they have become accustomed to while doing substantially less work to earn it. It was indicated that a detailed polemic intended to justify this bit of typically far-sighted and public-spirited union planning is in process of formulation. It is not difficult to understand why the concoction of anything that purports to be a convincing argument for such a preposterous proposition requires a truly vast amount of time and labor and literary skill.

●

TRAFFIC SALESMANSHIP: How to obtain, and train, and retain, salesmen of the proper sort is a matter that hasn't been off the top of railroad management's lists of worries in recent years, but times are changing rapidly, and the "buyer's market" will soon be back, leaving the volume of freight business depending, to a not inconsiderable degree, on the effectiveness of the industry's selling force. In an illuminating article in this issue G. Lloyd Wilson outlines the characteristics that distinguish the good salesman, summarizes the essentials that go into a program for training transportation salesmen, and suggests sources from which men who will meet the railroads' requirements may be obtained. Competitors have come a long way indeed from the time when a salesman's value to his employer was measured by the capacity of his cigar pocket, and the railroads haven't been indifferent to these changing conditions, but this authority believes many of them can do still more to insure maximum returns from their selling effort.

●

ATROPHY ASSURANCE: The spokesman for the brotherhoods on the Jersey Central has put down in black and white their case for higher wages, and the management has countered with an explanation of the road's parlous prospects if the brothers win what they're asking and if the controversy over state taxes is decided against it. An article on page 479 sums up these statements. This provocative juxtaposition of diverse viewpoints reveals with scintillating clarity the emotional basis of the unions' argument in the face of the economic dilemma into which they would force their members' employer. Admitting that the carrier is hard up at present—in the hands of the court, in fact—the employees' spokesman says it ought to raise its rates so it can pay higher wages. But if it raises its rates, assuming it would be allowed to by the guardians of the public interest, its business would go to its competitors. If it endeavors to economize by curtailing service and trimming off its branches, it reduces the volume of its business and defeats the purpose of such expedients. Either way, it can provide fewer jobs. Either way, the result is pernicious emaciation of the railroad. Either way, top-seniority employees stand to benefit for a time, perhaps, but at the expense of their less fortunate brothers. All of which adds up to the fundamental truth that there is none so blind as he who will not see.

●

"ACTIVATING" RESEARCH: It is entirely possible that the railroad industry doesn't need to do a bigger volume of research so much as it needs to work out a procedure to make the fullest possible use of the research that is being done already. If the latter objective could be realized, it isn't likely that there would be any hesitation about increasing the amount of research, because the voice of the "cash register" has a way of getting around all sorts of obstacles. Suggestions are offered in an editorial discussion in this issue of ways to stir up the dust that now encumbers the results of research already done but apparently never appreciated by those who could put it to productive use.

●

FRISCO ADDS C. T. C.: Special features embodied in the control machine at Springfield, Mo. (a part of the Frisco's new 42-mile C. T. C. installation between that point and Monett) and their use under operating conditions are described in the illustrated article on page 485, in which the topographic peculiarities of the territory and the return derived from the investment also are emphasized.

"AID" FOR AVIATION: A "little" more "federal aid" for the airlines is being offered by the Senate, which last week sent over to the House a bill (one of the Administration's spend-more-freely measures) calling for $75 million a year (a 25 per cent cut in the New Dealers' idea, at that) in the form of federal "pump priming" to stimulate bigger outlays by local tax-gathering organizations for airports. It is not too unreasonable to inquire if the distributors of largesse have in mind subsidizing railway passenger operations, too, inasmuch as they are generally depended on as stand-by facilities to which the airlines' customers are diverted on those not infrequent occasions when the planes are grounded by atmospheric disturbances. Of course, another way to handle the situation would be to let each form of transportation pay its own way.

●

ROADMASTERS MEET: Carrying on for the third year with the abbreviated pattern for annual meetings that war-time necessities have dictated, even though government restrictions have been eased, the Roadmasters' Association's committee chairmen gathered last week in Chicago, along with local members, to plan next year's work, select officers, and discuss five technical reports, the content of which is summarized in an article in this issue. These reports dealt with right-of-way grading, stabilization of roadbed, field repair of equipment, lengthening rail life, and yard track maintenance.

●

STILL PLENTY TO DO: Car Service Division Chairman Kendall's September round-up letter indicates, among other things, that a somewhat more realistic attitude toward the bad order freight car situation is being reflected in the reports, there now being 3.9 per cent awaiting repairs. Despite some drop in carloadings, the supply of most types of equipment remains tight, as the summary of the statement in this issue's news pages discloses, but tank cars are a conspicuous exception. The passenger load remains at peak levels because the Army has accelerated its demobilization processes.

●

K. P. ASSIGNMENT: One of the things the railroads can do to make a better impression on their customers, an editorial herein points out, is to see that good old-fashioned spit and polish are liberally applied to their properties. This is done in most places, of course, but horrible exceptions to the rule aren't unheard of. War-time excuses for sloppy surroundings may have been acceptable while there was a war on, but their time has passed. The airlines make a point of putting on a show of modernity and glitter around their ground facilities, and the railroads (whose premises aren't paid for by somebody else) may not always see fit to indulge in this form of advertising, but it doesn't follow that they can afford to let rubbish and grime pile up, thereby possibly giving travelers the idea that the industry doesn't have enough self-respect to keep its face clean.

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WHEN it comes to choosing cables for crossing, you can safely give the "green light" to Okolite-Okoprene. In installations like the one shown above, you can depend on Okolite insulation for its excellent electrical properties, and its protective jacket of non-flammable Okoprene to resist moisture and oil as well as abrasion and corrosion.

Okolite-Okoprene* may be safely exposed in sun and elements in addition to being buried in earth. It is simple to handle, splice and terminate.

This installation at Oakland, N. J., is one of a number of Okonite installations on the N. Y., Susquehanna and Western R. R.

Railroad men are invited to bring their problems of electrical transmission and distribution to Okonite engineers. By combining their experience in this way, the correct solution can be found. The Okonite Company, Passaic, N. J.

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RAILWAY AGE

Labor Demands Its "Rights"

In two recent editorials *Railway Age* has asked: "If it is the duty of private enterprise, government (i.e., the taxpayers) or both to provide 'full employment', what is the duty of those for whom employment is provided?"

Labor is giving its answer. Thousands who have become unemployed due to cessation of the war have refused employment at less pay for fewer hours than they were receiving for working 48 hours. The railway operating employees' unions have demanded an increase of 25 per cent in basic wages and numerous additional featherbed working rules that would cost three times as much as the proposed advance in wages. Railway shop employees' unions have announced they will demand a 36-hour working week at the same pay as for 48 hours—i.e., a 33⅓ per cent increase in wages per hour.

The United Steel Workers of America (C. I. O.) have announced a demand for a $2 a day increase in pay. The United Automobile Workers (C. I. O.) have announced that, to enforce a demand for a 30 per cent advance in pay, they will strike all plants of General Motors and boycott its products, while allowing operation of its competitors. The Ford Motor Company has closed down because of strikes virtually preventing production. And so on ad infinitum.

"Duty" Travels a Two-Way Street

Plainly, the prolonged and widely disseminated propaganda about the "right" of labor to be provided by private enterprise and government (i.e., the taxpayers) with "full employment" and with wages and subsidies that will afford it "adequate purchasing power" has had its natural effect on the attitude of labor. But has labor all the "rights" and no duty, while private enterprise and the government (i.e., the taxpayers) have all the "duty" and no rights, as respects these matters? Have railroad managements, for example, a duty to grant all railway employees advances in present wages, which are the highest in history, and no right to demand from employees work of value equal to the wages paid? Apparently, this is the view of the operating unions, which, by demanding many new featherbed rules as well as advances in basic wages, are seeking not only more pay for work that is done, but also a great increase in the already large payments made for little or no work at all.

It seems high time to emphasize that the management of every business or industry has duties to (1) the public and (2) its owners, as well as (3) its employees. The managements of the railroads, for example, have a duty *prescribed by law* to render good service to the public at reasonable rates. They have a duty to the owners of railroad securities to earn a fair return on the investment in (or valuation of) their properties. And they have a duty to employees to provide them good working conditions and pay them reasonable wages. As they have all these duties, it necessarily follows that they have no duty or right to yield to demands from any one of the groups mentioned that would make impossible performance of their duties to the other two groups.

Railway Labor Ignores the Public's Rights

Nobody has the hardihood to contend publicly that the right of railway labor to easy working conditions and high wages is superior to the right of the public to good service at reasonable rates. The issue always *publicly* raised by the spokesmen of employees is between the "rights" of capital and labor. They virtually contend that capital has no rights as compared with those of labor. But the duties of management to public, capital and labor are so interlocked that management cannot disregard its duty to capital without also disregarding its duties to the public and to labor.

The courts hold that capital invested in railways has a constitutional right to a fair return on investment; and capital provided the railway plant by making an investment in it, now amounting to more than $20,000 per employee. Investors will advance no more capital unless there is prospect of a fair return being earned on their old and new investment; and management has no right to continue investing earnings belonging to the stockholders unless there is prospect of a fair return being earned on invested earnings. But only by the investment of additional capital can service to the public be improved, expanded and rendered at the lowest practicable cost. Therefore, whatever spokesmen of the employees may say, it remains a fact that when they demand excessive increases in labor costs, they not only deny the right of railway capital to a fair return, but they also in effect deny the right of the public to good service at reasonable rates. And, furthermore, unless able to operate economically and charge correspondingly low rates, the railways will be unable to get enough traffic in competition with other carriers to provide their share of employment.

Spokesmen of private enterprise, including spokes-

men of the railroads, are showing too much timidity about discussing the duties and rights of the public and business as well as of labor. Public opinion, and especially labor opinion, is being poisoned by propaganda greatly exaggerating the duties of private enterprise and the taxpayers, as employers, and the rights of labor. Business and the taxpayers have no duty to provide labor, whether employed or unemployed, with income exceeding the value of the work that labor can and will do. Labor has a duty to do work equal in value to its income. The purpose of every form of economic activity is the production and sale of goods and services. Under the system of private enterprise no kind of goods or services can long be produced and sold at total costs of management, capital and labor exceeding their market value. Hence, high employment is dependent upon the production of a large volume of consumers' and durable goods and of services at total costs not exceeding the prices at which they can be marketed.

There is at present opportunity for peace-time prosperity and high employment. But the opportunity will be lost unless successful efforts are made to convince labor that it has duties as well as rights, and that its duties include doing work worth what can be paid for it.

For More Effective "Staff Work"

Top railway management of the American railroads has a lively and inquisitive interest in enlarging and improving the effectiveness of "staff work"—otherwise known as "research"—in the railroad industry; and has specific ideas for the attainment of this goal. This is not a mere expression of opinion but a positive statement of known fact, based upon the receipt, in confidence, of letters from some 25 chief executives of the country's largest railroads, most of them containing pointed and searching comment on an editorial, entitled "Need for Staff Work," which appeared in these pages in our June 16 issue. The observations of these executives serve principally to fortify the conclusions of our analysis, but they also suggest points where amplification and clarification are needed.

We drew an analogy between the railroads and the Army, pointing out that, like the Army but unlike any other large industry, the railroads had the surpassingly complex job of making a specialized application of almost all the principal trades and occupations. No industry turning out a homogeneous product such as soap, automobiles, steel, motion pictures, machinery, food products or electric power has to employ specialists in so many different occupations as the railroads do, or combine the products of so wide a range of other industries in order to yield its own product as do the railroads; or has such large forces so widely scattered that close supervision is impossible.

Like other industries, the task of transportation agencies other than the railroads is infinitely simpler than that of the railroads—not only because these other agencies are smaller and provide a much more limited variety of service, but also because none of them has to trouble itself with the host of legal, financial, technological, labor and economic problems which come to a transportation enterprise which owns and maintains the roadway it uses. No other industry is so minutely regulated as are the railroads by government at all its levels. No other enterprise, except the utilities and the post office, has daily contact with so many people. No other industry has to deal with so many different labor unions and apply such a multiplicity of agreements.

"Thinkers" Needed as Well as "Doers"

From any point of vantage, the task of railroad management in harmonizing diffuse economic, technological, institutional and personnel elements is so much more vast and involved than that of management of other industry as to place the railroads' burden in this respect in a category quite unique among all private enterprise. Only in the military services, more particularly the Army, is a managerial problem of comparable complexity to be found; and the Army's task of public and employee relations is infinitesimal compared to that of the railroads; because when the Army tells a man to do something he does it.

The railroads have been lambasted by critics, benefiting from hindsight, for not having introduced some innovation or another sooner than they did—but any fair judgment of their performance from the standpoint of managerial competence, giving weight to the relative magnitude of the carriers' job, would place railroad management on a pedestal for admiration, rather than in a bear pit to be baited.

The main purpose of this discussion is not, however, to defend railway management for its exemplary past performance—but to search, with the advice and criticism of our readers, for means by which even more marked success may be achieved in future. It is not enough that the managerial devices employed by the railroads to correlate, harmonize and lay foresighted plans for their diverse activities should equal or slightly excel such instrumentalities utilized in other large industry. Considering the relative magnitude of the railroads' problem in this sphere, it is apparent that they need correlating and an "observation post" staff on a much larger and more effective scale than does other industry which, by comparison with the railroads, has a mere a-b-c job to do.

In any organization, a functional distinction may be made between men whose job is to do and those whose task it is to think, plan and correlate. The officer with the "do" function is a "line" officer and the "thinker" is a "staff" man. These are military terms but the validity of their application to the railroads will not be questioned. It is unusual for an officer to exercise both "line" and "staff" functions at one and the same time, and do both jobs equally well. Most men have a preference, more or less marked, for either the one assignment or the other, and when they are given responsibility for both tasks at the same time, they are likely to slight one of them—while successful management requires that both functions be performed with equal thoroughness.

On the other hand, if a "line" officer has had no experience at "staff" work he is likely to be critical and unappreciative of suggestions which come to him from staff men—a tendency invariably intensified if the staff

officer is devoid of experience in the "do" category, and hence is occasionally tempted into making recommendations which, if not impractical, may be couched in terms which make them appear so to the critical. From the foregoing, is it not reasonable to conclude: (1) That the railroads need more effective "staff work" and a larger volume of it than other industry; (2) that both staff and line responsibilities should generally not be given to one man at the same time; and (3) that, since staff findings are of no value whatever unless put into effect by line officers, there must be the closest understanding and collaboration between staff and line officers, which can best be assured if each category of officer is given some experience with the other kind of work?

Here, again, the Army analogy appears to fit the railroads' situation. As we understand it, by periodic attendance at the War College, every high-ranking officer gains experience, with freedom from other responsibilities, at observation, study and analysis of the "staff work" type. There he learns, by academic methods, not only the latest advances in his own special department, but useful information also about similar advances in other departments with which his subsequent activities will have to be correlated. Conversely, few if any high-ranking staff officers attain their grades without experience at some time or another in active command of troops; that is, most or all staff men have also had experience "on the line." Granting that the Army wastes men and materials in time of war, as the railroads cannot do, and in such confusion offers a poor model of efficient organization—it still appears that the military have hit upon an effective formula for "line" and "staff" collaboration, without which the nation could not possibly have turned its resources to war as quickly and effectively as it did.

It is significant, too, probably, that several railroads, at least, which in recent years have enlarged or reorganized their "research," have made an effort to assure the collaboration of "using" departments in the conduct of the studies carried out in their behalf, with the prospect that the conclusions are more likely to be put to practical service if the departments for which studies are made participate in conducting them.

A "War College" for the Railroads?

Without expressing a dogmatic opinion, we offer a tentative suggestion, growing out of the foregoing train of thought, to wit: Might it not be a very good move for the railroad industry if the A. A. R.'s "Fletcher Committee" were made a continuing institution, with a gradually rotating membership, so that, in course of time, every important "line" officer would put in at least some months of service in that highly educational activity? And, still further adapting the War College example to railroad uses, might it not also be wise to give members of this committee plenty of time to devote to its work, freeing them in whole or in part from other duties during their term of membership?

The railroad industry has been the object of a good deal of "more research" preaching. Perhaps what is needed first is not a larger volume of research, but the discovery and application of an organizational procedure which will insure the effective use of whatever research and staff work may be done. If that requirement were successfully met, then these studies would acquire such an obvious "cash register" appeal that the increase in their magnitude would encounter few obstacles. The principal handicap to larger and more comprehensive "research" by the railroads, and to an improved status for "staff work," appears to be the great quantity of such work done in the past and now gathering dust in the archives—either because it was actually impractical or because too many practical people lacked the background to enable them to sense its value.

When an Equation Is Not an Equation

Some dictionaries define the word equation as an "act or process, or state of being, equal" and even in a mathematical sense it is presumed that the factors of an equation are, or eventually can be made, equal.

In the sphere of railroad operation we hear of equated tonnage and, more recently since the advent of the Diesel-electric locomotive, equated fuel consumption values. All of which brings up the question of the formula to be used in equating fuel oil to coal so that our records of locomotive and train operation with relation to fuel consumption can always be presented ultimately in terms of pounds of coal per thousand gross-ton-miles or per passenger-train-mile.

The question as to what values and what methods to use in "equating" oil to coal is disturbing the minds, and possibly the sleep, of many hundreds of railroad men these days, for the peculiarities of locomotive performance under the pressure of war-time traffic loads are producing some fuel figures that are keeping many mechanical and operating men running around in circles trying to explain. Why, for example, should a railroad that has replaced many of its older steam locomotives in freight service with modern Diesel-electrics wake up to find that its coal consumption per thousand gross-ton-miles is higher in a twelve-month period in which a very substantial proportion of its main-line freight train mileage is Diesel operated than it was in the previous twelve-month period under steam operation? Everyone knows that the Diesel-electric is a far more efficient user of fuel—from a standpoint of thermal efficiency—than a steam locomotive is and yet the cold figures which reach the president's desk in the form of I. C. C. records indicate that such is not the case. In other words, it is, but it isn't—and the president, in some cases, is asking his mechanical and operating men, "Why?"

A study of the fuel records of the roads using large numbers of Diesel-electric locomotives and their methods of equating fuel oil to coal will produce plenty of evidence that the statistical results of the attempt to find the exact relation of a gallon of oil and a pound of coal are in about the same general state as some New Deal financing—in other words, all balled up.

The ideas of the several railroads—through what process arrived at we do not know—as to the relation of oil to coal seem to vary all the way from about 15 to over 200 pounds of coal to a gallon of oil. Fortunately in the Diesel that gallon of oil is pretty well controlled as to its use but anyone familiar with steam locomotive

operation knows that the multitude of varying conditions, both human and mechanical, that affect the power produced from the 15 to 65 pounds of coal will give results that are anything but accurate.

To prolong this discussion will serve no good purpose, for many who have studied this problem of the fuel equation have come to the inescapable conclusion that there is no use in trying to make two things equal that seem not even to be related. Why wouldn't it be far more sensible, at the outset, to establish a performance basis of comparison for Diesel power with respect to fuel and keep the one we have for steam without trying to get the two together? So long as anyone has the privilege of changing the basis of equating fuel we'll be in the position of the players in a card game, the rules of which can be changed at any time during the game to suit any player's own fortunes.

On Station Cleanliness

The scene is the trainshed of a large passenger station. Some of the suburban passengers waiting on one of the platforms for their train to be backed in were taking no particular note of their surroundings, being engaged in reading their papers or talking in small groups, but others, less patient, were gazing expectantly along the track toward the outer end of the trainshed. Those whose eyes chanced to dwell on the space between the platforms did not find a particularly inspiring view. Littering this space was an unsightly collection of used drinking cups, discarded cigarette packages, crumpled newspapers, cigar butts and orange skins—their condition and numbers indicating that they had been accumulating for some time.

Some of those standing on the platform might have recalled other evidences of apparent neglect that they had noted while passing through the station. In the minds of certain of them the unfavorable impression was no doubt tempered by the thought that there is still a shortage of man-power, particularly of the unskilled type employed for policing stations, and that consequently the railroad must be experiencing considerable difficulty in obtaining sufficient labor to keep the station spick-and-span. On the other hand, the patron of a less tolerant temperament might accept the unfavorable impression at its face value, adding it to the sum total of his impression of railroads in general, and then go about his business.

Such reflections bring to mind a development that could be observed on every hand in business and industry generally during the war years. Because the demand for practically everything was so much greater than the supply, the element of competition faded far into the background. The big problem was to get something to sell, not to get customers, with the result that, increasingly as time passed, there was a disposition to forget that it had ever been necessary to please the buyer. To a surprising degree this attitude is being carried over into peace time. It can be observed especially in retail businesses, such as stores and restaurants, where there is still a tendency to regard the customer as somewhat of a nuisance.

It is not to be said of the railroads that they are guilty of such a mistake. To prosper they must have the good will of the public. The matter of station cleanliness is only one of many elements involved in getting and holding that good will, but it is an important one. That is why, at stations where the dearth of labor for policing work has been a hampering influence on cleanliness during the war years, there should be no delay in getting back to pre-war standards of upkeep as quickly as conditions will permit.

Traffic Chameleons

The exigencies of war and peace have required the railway traffic solicitor to change color twice within the last four years. When the war began it was necessary to make him change over from competitive selling of the railways' freight traffic services to a sort of general handy man who, in the main, did not solicit traffic but aided the shippers and receivers in every way possible, and, in addition, was frequently called upon to engage in other activities, such as riding troop trains, which had nothing to do with the solicitation of freight traffic.

In general, the freight traffic department solicitation forces have been rather thoroughly disorganized. This may be attributed to the lack of competitive solicitation of freight traffic to a certain extent, but most city freight agents and traveling freight agents were of military age and many of them went into military service. Thus, on virtually every railroad, rather sweeping changes will have to be made in the solicitation forces.

Before the war, there was much criticism of the lack of real sales ability among railway traffic solicitation forces. To a certain extent this was well founded, but it should be remembered that high pressure sales methods such as are used in the refrigerator or automotive industries, as examples, can have little place in railway traffic solicitation. There is no way of inducing a shipper to forward more freight than he has available to ship. The selling of an intangible service must differ from the selling of commodities. This does not mean though that railway selling methods do not need revision. The days when the railway traffic solicitor was competing only with other railway traffic solicitors are gone. Competition in transportation will reach its greatest height within a few years; and improvement of salesmanship should be given the greatest consideration by freight traffic officers in charge of solicitation.

Stopping the Leak

The number of loss and damage claims has had a skyward trend during the war. The reasons have been poor packing, inferior containers and inexperienced labor used by both shippers and the railways. The waste has risen to such proportions that freight damage claims are expected to exceed $60,000,000 in 1945. There is not much that can be done about it until the alleviation of the pulp shortage permits the lifting of restrictions on container materials, particularly fiberboard, so that better boxes may be made available.

Railways and shippers are showing the same spirit of cooperation which was so important in moving the staggering load of war-time freight. They are

cooperating on research programs seeking better packaging methods and materials. The railways' consolidated classification committee has arranged container testing facilities at laboratories in Chicago and New York to which shippers will send their fiberboard containers for bursting and compression tests to determine their relative efficiency as compared with pre-war standards. There will be no charge for this service, and any shipper can arrange for it through the railways' regional classification committees. Furniture manufacturers, whose products are particularly susceptible to damage, are holding special "clinics" of their own on packaging problems.

The railways are not relying entirely on better packaging to solve the loss and damage problem. Better equipment and better freighthouse labor are also in prospect.

This cooperation between railways and shippers is important *per se* in solving a vexing problem. It is also important in showing that the mutual understanding between the railways and their customers, which produced such excellent results during the emergency, can be continued to their mutual benefit.

How Do You Purchase Paint Brushes?

Peace brings the promise of better paint brushes for civilians. Natural bristle brushes of pre-war quality began to disappear from the market when the importation of Japanese-controlled China bristle was halted during the second half of 1941 by an embargo that was placed upon Japan during that summer. Because China was the principal source of our bristles, this action more than any other promoted the development of synthetic bristles.

Surmounting many difficulties, American science and industry developed and improved synthetic bristles to the point where paint brushes now approximate the efficiency and practicability of good quality natural bristle brushes. Wartime distribution, however, was restricted largely to military uses. As a result, civilian brushes comprised varying mixtures of bristles, horsehair and other fibers. These products were far inferior to brushes to which railway painters had been accustomed, but the cessation of hostilities brings quick relief in sight.

This transition period is an appropriate time for railway procurement and using departments to review their purchasing methods—principally because a large proportion of pre-war railway brushes were bought to rigid individual railway specifications which, apparently, were often drawn up with little regard to manufacturers' standards. Many railway orders prescribed specifications impracticable to begin with. Special manufacture usually involved delay in filling orders, necessitating larger railway inventories, and above all a price premium ranging up to 25 per cent for comparable quality, because railway brushes were produced in comparatively small lots. Now is the time to discard outmoded individual specifications and to adopt paint and varnish brush standards that encompass several reputable manufacturers' standard designs; standard lines are extensive enough to meet practically all railway needs.

Several years ago an eastern railway solved a particularly irritating brush procurement problem by discarding its restrictive specifications and adopting a simplified plan devised after a careful canvass of all using departments and a study of manufacturing plants and methods. A standard list defining quality, physical requirements and dimensions within limits that included the standard designs of at least six nationally known manufacturers, replaced restrictive specifications. Not only did the plan simplify the procurement of brushes, but it also insured competition from reputable sources of supply. It provided for purchases in standard size packages, and quick shipment from nearby company warehouses, thus reducing railway stores stock.

After several years' application the plan resulted in appreciable savings, and the quality and efficiency of the manufacturers' standard brushes were superior to those previously furnished under individual restrictive specifications. Most reputable manufacturers have been making paint brushes for generations. Let the railways define their specific requirements, pay a fair price and buy to the standards of reputable manufacturers, and results will mean another long step towards simplification, standardization and better brushes for railway use.

Spoiling the Show for Himself, Too

Roadmasters Hold Busy One-Day Session

Restricted meeting is featured by five technical reports, the selection of four honorary members, the election of officers and the making of plans for the coming year

GIVING every indication that it has survived the hardships of recent years with unimpaired vigor, the Roadmasters' and Maintenance of Way Association held a restricted one-day annual meeting at the Stevens Hotel, Chicago, on September 12. Carrying out plans that were completed before V-J Day, the meeting was attended only by members of the executive committee, the chairmen of technical committees, and members within easy reach of Chicago. Notwithstanding the end of the war, with the subsequent action of the O. D. T. in partially relaxing the ban on conventions, no attempt was made to expand the attendance at the meeting beyond the original plans, this being in recognition of the fact that track men in general have not as yet experienced any appreciable lessening of the heavy burdens that have kept them so closely on the job in recent years.

This was the third consecutive year that the annual affair of this association has been confined to a one-day meeting in place of the full-scale three-day convention that is normally held in times of peace. But those present were buoyed by the thought that, with the war emergency a thing of the past, the association would be able in the future to return to its regular three-day annual meetings, thereby enabling it to function with maximum effectiveness in helping toward the solution of the many perplexing problems that track men in general are certain to encounter in the coming years.

Presided over by E. L. Banion, assistant superintendent, Atchison, Topeka & Santa Fe, Needles, Cal., the meeting was a busy one, with much constructive work being accomplished, including the presentation and discussion of five comprehensive reports by technical committees, the election of four honorary members, the selection of officers for the coming year, and the making of tentative plans for the work to be done in the year ahead, including the selection of six subjects for study by technical committees. Interposed with these items were the annual reports of the secretary and treasurer and brief but inspiring addresses by the president and the president-elect.

The President Speaks

Because an election of officers was not held at the one-day meetings in 1943 and 1944, Mr. Banion appeared before the group for the third time in the capacity of president. In his address he reviewed the problems of the association, and of track men in general, during the last several years, and spoke in a tone of appreciation of those men and organizations who have made it possible for the association to carry on its work, even though on a restricted basis, during these years. Turning to consideration of the future, he said that "the reconversion period facing us has added many burdens and has increased the difficulties maintenance of way officers must face, with the probability that, while war-time problems have been eased, the problems of the months ahead will be even more severe." While maintenance men have accomplished miracles during the dark days of the past five years, he said, they must now "face an entirely new situation to keep pace with the rapidly changing picture. Of one thing we are certain, these men will not be found wanting in courage to meet the demands, whatever they may be.

The presentation of the five committee reports was by far the largest single item of business on the program. These reports were on the following subjects: Field Repair and Maintenance of Work Equipment, Including Motor Cars; Prevention of Damage to Rail; Yard Maintenance Under Extraordinary Traffic; Stabilization of Roadbed; and Modern Methods of Right-of-Way Grading and Drainage. Each report was followed by a highly interesting discussion.

Honorary Members

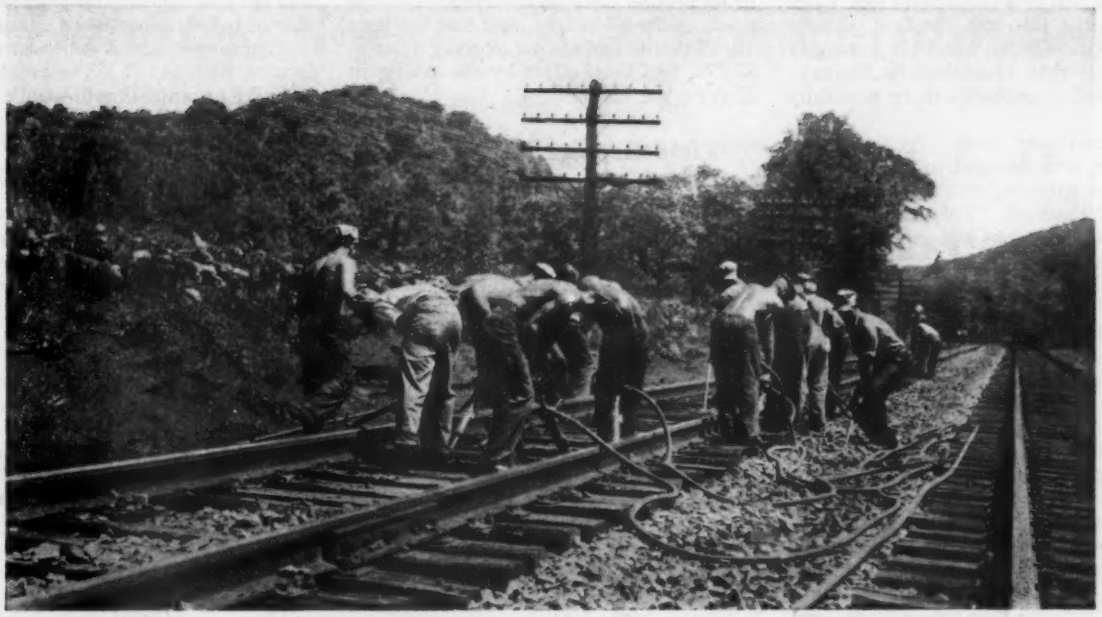
One of the highlights of the day was the election of the four honorary members, these including Herbert R. Clarke, chief engineer, Burlington Lines, a member of the association since 1920, a chairman or member of many of its committees, and president of the association in 1929; Gen. Carl R. Gray, Jr., director general of the First and Second Military Railway Service, and, before the war, executive vice-president of the Chicago, St. Paul, Minneapolis and Omaha; Charles W. Baldridge, assistant engineer (retired), Atchison, Topeka & Santa Fe System, a member of the association since 1919, a member or chairman of many of its technical committees, and its president in 1935; and William H. Sparks, general inspector of track, Chesapeake & Ohio, a member of the association since 1919, a member of many of its technical committees, who has an almost unbroken record of attendance at the annual meetings for the last 25 years.

In the election of officers H. E. Kirby, assistant engineer, Chesapeake & Ohio, Richmond, Va., was advanced from first vice-president to president; E. J. Brown, engineer of track, Burlington Lines, Chicago, was advanced from second vice-president to first vice-president; F. J. Meyer, chief engineer, New York, Ontario & Western, Middletown, N. Y., and a director of the association, was elected second vice-president; and E. E. Crowley, roadmaster, Delaware & Hudson, Albany, N. Y., was re-elected treasurer. F. G. Campbell, assistant chief engineer, Elgin, Joliet & Eastern, Joliet, Ill., was elected a director to fill the unexpired term of Mr. Meyer. Directors elected for full four-year terms were Cornell Halverson, division roadmaster, Great Northern, Willmar, Minn., and J. E. Fanning, assistant to chief engineer, Illinois Central, Chicago.

The new officers were installed by Mr. Clarke who, referring to their past records with the association, expressed confidence in their ability to fulfill in a commendable manner the responsibilities entrusted to them. After a brief discussion of the problems confronting the association and the railroads, Mr. Clarke turned to a discussion of "reconversion," in which connection he spoke in part as follows:

"During the past two or three years, things which previously were important have been largely lost sight of, and one of those things is the matter of efficiency and cost. It has not been a question of how much it might cost to do the work, but it has been simply a matter of getting the job done. Now, we must get back to sound principles and economic thinking. Naturally, as conditions improve, we will be able to secure more efficient labor and, to some extent, that will ease our problems, but I think we will have to readjust our mental condition and perhaps reorient our thinking."

In a brief address accepting the responsibilities as head of the association for the coming year, Mr. Kirby, among other things, stated that, in view of increasing competition on the part of government-subsidized transportation agencies, the duty of all maintenance men, in common with other railway employees, is to "concern themselves with matters and movements, both economic and political, which may in the future affect our railroads"; emphasized the importance of hard work on the part of those members who wish to get the most out of the association's activities; and made a plea for the full co-operation of all the



Roadmasters Do Not Expect That the Problems of the Future Will Be Less Difficult Than Those of the Recent Past

members during the coming year, stating that, in view of the splendid work done by the technical committees in the limited time available to them during the past year, the period ahead should bring even better results, with there being "no excuse for a disappointing showing."

The subjects selected at the meeting for investigation during the ensuing year are as follows: Selection and Maintenance of Ballast; Tie Failures and Measures for Overcoming Them; Inspection of Rail by Track Forces; Programming Work to Obtain Maximum Use of Power Equipment; Track Maintenance Problems in C.T.C. Territory; and Minimizing the Need for Slow Orders.

Following are abstracts of the five technical reports presented at this year's meeting.

Right-of-Way Grading

Some of the inadequacies inherent in the early methods employed in constructing railroad rights of way were dealt with first in the report on Modern Methods of Right-of-Way Grading and Drainage, which was prepared by a committee of which A. G. Reese, district engineer, Chicago, Burlington & Quincy, was chairman. Ascribing the defects in early methods to the fact that equipment for doing a better job was not available, the committee said that these defects included narrow cuts with relatively steep slopes and the construction of embankments, with material dumped from trestles.

The resulting difficulties have been aggravated by the maintenance methods generally employed, this also being ascribed to lack of proper equipment. These difficulties have included unstable side slopes in cuts and the overloading of fills without providing adequate slopes, resulting in slides in both cuts and fills; the formation of snowdrifts in the narrow and deep cuts, resulting in delays to traffic and in water troubles when the snow melted; and the formation of water pockets in embankments with resulting exorbitant costs for maintenance.

The committee then turned to a description of the new standards and methods of right-of-way grading that have been developed during the last several years to overcome the difficulties mentioned. Briefly described, the new methods of right-of-way grading include the resloping of cuts to produce easier gradients, or treating them in such a manner as to produce a concave surface with the maximum depth as far from the track as possible; the restoration of fills to produce side slopes of at least 4 to 1 wherever possible; the construction of heavy, well-compacted berms, or the application of other stabilizing treatment, at the toes of embankments that are too high to permit the slopes to be flattened appreciably; and the construction of surface ditches back from the tops of cuts, along with channel changes in creeks and streams, to direct water away from cuts and fills.

Considerable space was devoted to descriptions of the manner in which modern grading equipment is used to achieve the results mentioned above, the equipment used including bulldozers, angle graders, carryalls, gas shovels, trucks, motor patrols, draglines and on-track spreader-ditchers, the types of equipment to be used on any particular job being determined by the character of the work involved.

Although most of the classes of work described have been done only during the last two years, making it rather difficult to evaluate all of the benefits derived, the committee said that the results obtained demonstrate clearly that they have accomplished many improvements in the maintenance of railroad track. In summary, these include the diversion of water away from the track, along with more rapid runoff; more efficient drainage of the ballast section, resulting in lower maintenance costs; reduced heaving of track during cold weather, eliminating or minimizing the necessity of applying shims; better visibility at highway crossings, thereby preventing many crossing accidents; less drifting of snow in cuts, with a consequent reduction in train delays; and the improvement of visibility throughout the territory graded, reducing the hazard of accidents to motor cars and work equipment.

Stabilization of Roadbed

The report on Stabilization of Roadbed, which was prepared by a committee headed by J. R. Rushmer, roadway engineer, Atchison, Topeka & Santa Fe, was devoted for the most part to a discussion of the latest methods of roadbed grouting. However, it was prefaced by a general discussion of the causes of unstable track, in which it was pointed out that, before any type of roadbed stabilization can be undertaken with confidence, surface drainage should be in good repair, so that water does not stand against the roadbed; the widths of cuts and fills should be adequate; and their slopes should be flat enough to be inherently stable against sliding or sloughing action.

Various means that have been used to stabilize soft track were then discussed more or less briefly, including the use of pipe drains of various types, French or rock drains, and concrete slabs and wood mats.

However, all of these methods, it was stated, are inherently rather costly and are also difficult to install under heavy fast traffic. The committee then turned its attention to the method of stabilizing soft track that involves the

driving of cull or second-hand ties, poles and old rails into the roadbed, stating that the cost of this work is generally lower than that of elaborate drainage systems and is probably more generally reliable.

The remainder, and larger part, of the report was devoted to a discussion of pressure grouting as a means of stabilizing soft roadbed. "This method," said the committee, "does not interfere with traffic, is delayed less by traffic than any other method, and re-establishes the stability of the roadbed in a very short time, with little or no seasoning period." According to the committee there are two widely divergent methods of roadbed grouting, (1) hydraulic pressure grouting, and (2) pneumatic pressure grouting. Originally, said the committee, pneumatic pressure and rich mixtures were more common, but it expressed the opinion that the greatest mileage of roadbed to date has been stabilized by lean mixtures injected by the hydraulic method.

Examples were then given of applications of the two methods, one involving the stabilization, with pneumatic pressure and rich mixtures, of nearly seven miles of track consisting of 197 comparatively short water pockets, and the other the grouting with hydraulic pressure of approximately 200 miles of track on a large western railway since 1942. In both cases substantial savings in track maintenance costs were reported.

Following a discussion of the use of grouting in stabilizing slides, the committee discussed some of the principles underlying roadbed grouting, pointing out that fine sand and cement are necessary in most cases; that fine sand can be pumped with less cement than can coarser sand; that the addition of emulsified asphalt in small quantities improves the ease of pumping and adds to the density and waterproof character of the grout; that the object of grouting is to expel water from the roadbed and to fill all voids; and that the process is so new that no forecast can be made as to the life of the benefits received, although the belief is that grouting gives promise of being more permanent than any other type of stabilization work.

After listing the main items of equipment needed in roadbed grouting work, the committee discussed some of the details involved in obtaining maximum penetration of the voids which it is desired to fill with the grout. Next came a discussion of the considerations involved in planning grouting programs, it being pointed out that "most organizations do not realize the possibilities of the process, and many locations that can be grouted successfully are overlooked, necessitating a second trip over the territory with the equipment."

The final portion of the report was devoted to a description of a project in which the grouting process was used to overcome severe sliding conditions in a fill. Discussing the results obtained, the committee said that, from the time the grouting work was completed in December, 1944, until June 28, 1945, only 28 hr. of section labor were expended on the track in the slide area, and that by June 10, 1945, the entire cost of the grouting, $3,774, had been offset by the saving in direct track labor.

Field Repairs to Machines

In the report on Field Repair and Maintenance of Work Equipment, Including Motor Cars, which was prepared by a committee headed by W. E. Chapman, division engineer, Central of Georgia, the expressed purpose was to "set forth those overall measures that may be taken to cope with the problem, whether on a large or small railroad, and whether with few or many power machines." At the outset it was asserted by the committee that, to obtain maximum results from the measures outlined, it is imperative to develop a well-rounded and co-ordinated maintenance of way equipment organization consisting of the following essential subdivisions: (1) Supervisory organization, (2) operators of machines, (3) field equipment maintenance forces, and (4) shop maintenance forces.

After stating that one of the most important functions of the supervisory organization is the selection and purchase of work equipment, the committee went on to deal with the factors that must be taken into consideration when selecting new or additional units of work equipment, giving due attention to those factors having a bearing on the problem of maintenance and repair. In discussing the problems of practical maintenance, the first factor mentioned was the field service to be rendered by the manufacturers, which, said the committee, must include the instructing of operators and maintenance men, and systematic inspections by the manufacturers' service men.

Following a discussion of the selection, training and qualifications of machine operators, emphasis was placed on the necessity of assuring that operators understand the need for keeping their machines clean and properly lubricated. With reference to the latter requirement, the committee stressed the need for using the proper grade, types and quality of lubricant at the proper time. The value of having operators make periodic reports relative to the condition of their machines was also mentioned.

Pointing out that field maintainers form the foundation of the equipment maintenance organization, the committee went on to discuss the selection, training, qualifications and duties of such employees, declaring that their responsibilities should, if possible, be preventive rather than corrective. The factors to be taken into consideration in providing transportation and housing for field machine maintainers were then given attention, after which the committee discussed the advantages of maintaining adequate supplies of repair parts for maintenance of way machines. Finally, attention was given to the matter of replacing worn-out or obsolete machines.

In its conclusion the committee said that the economical and efficient field repair of maintenance work equipment, including motor cars, is dependent on many factors, such as: (1) The creation of an effective organization to handle the work equipment; (2) the purchase of dependable machines adapted to the work to be done; (3) co-operation by the manufacturers of the equipment; (4) the competence of the operators and field maintainers; (5) the extent and persistence of supervision over all phases of the operation and maintenance of equipment; (6) the equipping of maintainers properly; (7) adequacy of lubrication; (8) the ready availability of a sufficient supply of lubricants and repair parts; (9) the reclamation of any usable parts; (10) the replacement of machines promptly that cannot be maintained economically; and (11) the adoption of a "stitch in time," or preventive, policy in maintaining the equipment.

Preventing Damage to Rail

After stressing the necessity of preserving the life of rail in track, particularly during a period characterized by heavy traffic and a shortage of new rail, a committee of which J. E. Fanning, assistant to chief engineer, Illinois Central, was chairman, listed 25 of the more common causes of damage to rail. It then discussed in detail several types of damage, including that caused when a car is derailed by "rocking off"; nicks in rail heads caused by broken wheels; engine burns; and that due to the operation of unbalanced locomotives, and to loaded cars with flat wheels.

Pointing out that by far the greatest amount of damage to rail caused by traffic occurs at the joints, the committee discussed the various measures that should be taken to prevent, minimize or repair such damage, including the use of power bolt tighteners to obtain greater uniformity in both tension, methods of flame straightening rail ends and reforming angle bars, the application of reformed or new bars when the fishing becomes badly worn, and maintenance of the proper expansion gap at rail ends.

Since "poor ties, foul ballast or insufficient drainage have long been recognized as detrimental to the life of rail," the committee said that money spent for better maintenance, including lines and surface, will reduce the cost of rail. Other methods mentioned for preserving the life of rail include the use of anchors of an efficient type, with care being taken to avoid damaging the bases of the rails when applying them; proper lubrication of the rail ends at the time the rail is laid; and the use of rail lubricators on curves to prevent accelerated side wear. Pointing out that the effect of locomotives and cars passing over loose gravel on the rail at highway crossings is more disastrous to the life of rail than is generally realized, the committee advocated that extra care should be taken when inspecting rail at crossings. The detrimental effects of both tight gage and wide gage on the life of rail were also

(*Continued on page 491*)

Debates Wage Case for Employees

Jersey Central magazine presents views of union spokesman and those of chief executive officer in parallel columns, in candid facing of issue

THE September issue of "The Coupler," employees' magazine of the Central of New Jersey, presents the arguments of a spokesman for the train and engine service brotherhoods in favor of the wage increase and rule changes which these organizations are demanding; and, in a parallel column, a statement by William Wyer, chief executive of the railroad, setting forth the serious difficulties which both the railroad and its employees could expect to ensue from this increase, if granted.

The spokesman for the labor organization is B. H. Wenner, general chairman, Brotherhood of Locomotive Firemen & Enginemen, in whose statement the Brotherhood of Locomotive Engineers and the Order of Railway Conductors concurred. The Brotherhood of Railroad Trainmen did not join in the expression, but its general chairman told the editor of "The Coupler" that he might have something to say later.

"Conservative" Demands

Mr. Wenner in his presentation concedes that the financial situation of the Jersey Central is unsatisfactory, contending, however, that this is "no fault of the employees," and that the railroad "has redress through rate increases. The employees, finding themselves in a similar situation, have no redress except through an increase in wages." Mr. Wenner recalls that, in 1943, an "emergency panel" found these organizations "entitled to at least 7½ per cent" more than they were receiving, but they actually secured an increase of but 4 cents per hour at that time. He quotes also from a speech on the floor of the House by Congressman Lemke and a minority report by Frank M. Swacker, member of the 1943 "emergency panel," which favored larger increases for railroad employees than they received—a contention resting upon the increases received by employees of other industry and upon increases in the cost of living.

The increases now sought by the train and engine service organizations, Mr. Wenner argues, "are very conservative" when compared to the pay increase demands of unions in other industries; and to prove this point he cites the 30 per cent pay rise demand of the United Auto Workers, which is also seeking certain improvements in its working rules. Mr. Wenner further argues that some of the rule changes his organizations are demanding "will not actually cost the carrier more money, but in some instances would actually save money." He then lists a half-dozen of the rule changes which the unions are seeking (electric lights and other improvements in cabooses and engines, with better eating and sleeping accommodations; compensation for time spent in learning the road, attending investigations and receiving instruction; time-and-one-half for Sundays and holidays; train-length limits; free watches; sick pay) and asks what is unjust about such demands.

Acknowledging that the Jersey Central is in a bad way financially, Mr. Wenner says that, nevertheless, "we are not unmindful of our responsibility to the employees we represent" and that "we are only attempting to streamline our agreements to modern conditions and bring same up to a par with agreements of employees in other industries." In conclusion he says:

"In previous requests for increases in pay and new and revised rules, the carrier has always pleaded poverty; will bankrupt the railroad, etc., but somehow or other they seemed to survive. We are of the opinion that after we secure the increase in pay requested, plus the new and revised rules, the C. R. R. of N. J. will still be in existence."

A Dollars and Cents View

Mr. Wyer's statement begins with a reminder that it is the policy of "The Coupler" to "present both sides of the subjects that may be controversial" and continues, in part, as follows:

"We are all interested in bettering ourselves financially. At the same time, however, the Jersey Central is placed in what may be a tragic dilemma by the new national demands of the train service and maintenance of way organizations for wage increases of about 25 per cent, plus changes in train service working agreements, which bring the actual demands to around 70 per cent.

"Post-war competition promises to be the most severe the railroads ever have faced, and no one knows what the future will bring. There are possibly a number of railroads which under present conditions and perhaps for some time to come can absorb the additional cost of some of these demands. On the other hand, the Jersey Central not only is not a rich railroad, but as you know has been in the hands of the Federal Bankruptcy Court for almost six years. We have paid no interest on our bonds for more than six years. The State of New Jersey claims we owe over $30,000,000 on account of unpaid taxes. We have not paid any dividends for fourteen years.

"Our payroll last year was $29,640,300—or about half of all the money we took in—but our net income after all charges was only $217,932, although we handled a high volume of war business which we cannot hope to keep in peacetime. We estimated that the operating brotherhoods demands, and an equal 25 per cent wage increase to non-operating employees, would cost us an extra $8,750,000 yearly. It almost goes without saying that we cannot begin to withstand heavily increased wages—in fact, we shall undoubtedly have difficult going even if we do not have to meet any wage increases at all.

Accelerated Attrition

"I do not believe increased freight and passenger rates will today provide the answer to meet additional wage costs on any railroad, for trucks will be back on the road as soon as they can be built, and we will have intense airplane and bus competition, not to speak of such new, near-at-hand pipelines as Big Inch and Little Inch. Higher freight rates will send business to these competitors, and with that departing business will go some of your jobs. It also is true that the more we must spend in wages, the less able we are going to be to provide modern equipment and facilities with which to compete with trucks, buses, pipelines, airplanes, and our railroad competitors.

"The alternative to higher rates and resulting loss of business is in my opinion curtailment and elimination of all unprofitable lines and services, and this is not good for any of us, either. As you know, we have already been forced to make a number of abandonments, such as Piers 39 and 80 in New York, the 23rd Street Ferry, Pier 6½ at Elizabeth, and many trains, including the Blue Comet and Williamsporter. There is pending an application for abandonment of part of our Seashore Branch, and we are studying the possibility of abandoning other unprofitable branch mileage. I believe substantially higher wages would force us to go even farther along this line than we otherwise would, for wages are the most important factors in decisions of this kind.

"None of our competitors, rail as well as non-rail, is going to shed very many tears over our difficulties (and by 'ours' I mean both yours and managements).

(Continued on page 484)

First 4-8-4 on the New York Central

Boiler, enlarged from the L-4 class 4-8-2 type, built without dome, has deep combustion chamber, large grate and unusual ashpan capacity — Complete roller-bearing-rod installation

THE delivery of locomotive No. 6000 by the American Locomotive Company early this spring marked a major step forward in the progress of the New York Central System's equipment engineering department in steam locomotive development. Milestones in this design progress during the past 20 years are the Class J-1 4-6-4 type in 1927, followed by the Class J-3 in 1937, and by refinements in the Class L 4-8-2 freight locomotives which have adapted them to high-speed passenger as well as freight service. These improvements began with a rebuilt Class L-2 locomotive followed by Classes L-3 and L-4. The first of the latter group were delivered in 1942.

The new locomotive, Class S-1a, is a major step in advance of the Class L-4 primarily in boiler design and capacity, but it also includes a number of important changes in the design of mechanical details developed by the railroad's engineers.

Starting with the intention of bringing out a new class of L-type locomotives with some expansion of boiler capacity, it became evident that to carry out the possibilities in this direction to the full a 4-8-4 type wheel arrangement was necessary. During dynamometer-car tests the Class J-3 4-6-4 locomotive developed a maximum indicated horsepower at high speeds of 4,800; the L-4 class 4-8-2 locomotive developed 5,400 i.hp. It is anticipated that the Class S 4-8-4 locomotive will develop not less than 6,000 i.hp.

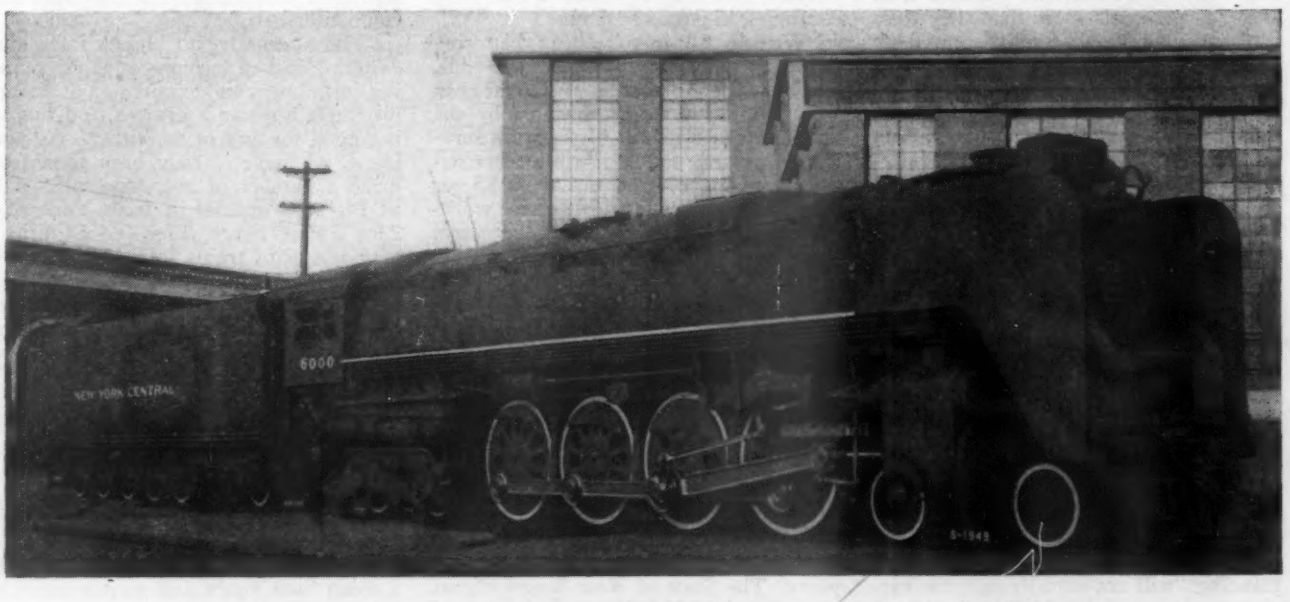
For the purpose of investigating the effect of driving-wheel diameter on locomotive performance locomotive No. 6000 was delivered to the railroad with driving wheels 75 in. in diameter, but a set of 79-in. drivers was provided for later use. The original intention had been to conduct performance and capacity tests of the locomotive while equipped with the 75-in. driving wheels, then to replace these with the 79-in. drivers, increasing the boiler pressure to maintain the same tractive force, and then to place the locomotive in regular service. These plans were changed, however, and the locomotive was placed in road service with the 75-in. drivers. After making several trips between Harmon and Chicago it was placed in Harmon-Cleveland service for several weeks. Then the 79-in. wheels were installed early in July and the locomotive was assigned to one side of the Commodore Vanderbilt between Harmon and Chicago. Here it is running at the rate of about 27,000 miles a month and up to the middle of August had accumulated a total of about 60,000 miles. The Commodore Vanderbilt is a heavy train with a number of stops and is considered a hard run. So far the locomotive is said to have made easy work of it.

About October 1, 1945, locomotive No. 6000 will be withdrawn from service for

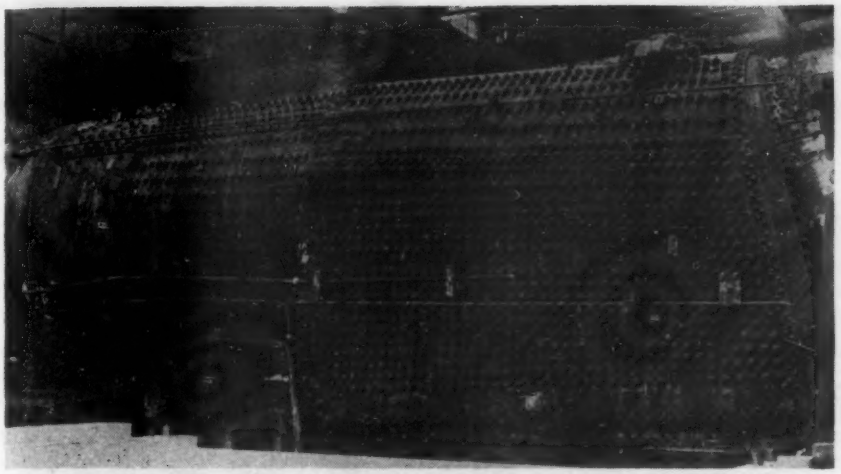
Table I—General Dimensions, Weights and Proportions of the New York Central 4-8-4, Class S-1a Locomotive

Road class	S-1a
Road number	6,000
Date built	March, 1945
Steam pressure, lb. per sq. in.	275*
Drivers, diameter, in.	75*
Cylinders, number, diameter and stroke, in.	2—25 x 32
Rated tractive force engine, lb.	62,330*
Valve gear, type	Baker
Valves, piston, diameter, in.	14
Maximum travel, in.	8½
Steam lap, in.	1⅛
Exhaust clearance, in.	⅜
Lead, in.	⅝
Cut-off in full gear, per cent	83
Dimensions:	
Height, rail to top of stack, ft.-in.	15—1¾
Height, rail to center of boiler, ft.-in.	10—7½
Width overall, ft.-in.	10—7½
Cylinder centers, in.	92
Wheel bases, ft.-in.:	
Driving	20—6
Rigid	13—8
Engine, total	48—9
Engine and tender, total	97—2½
Weights, lb.:	
Front truck	91,000
Drivers	275,000
Trailing truck:	
Front	48,000
Rear	57,000
Engine, total	471,000
Tender (⅔ loaded)	337,400
Weight on drivers, per cent weight of engine	58.39
Weight on drivers ÷ tractive force	4.41
Tender:	
Type	Bed
Water capacity, gal.	18,000
Coal capacity, tons	46
Wheel arrangement	4-10-0

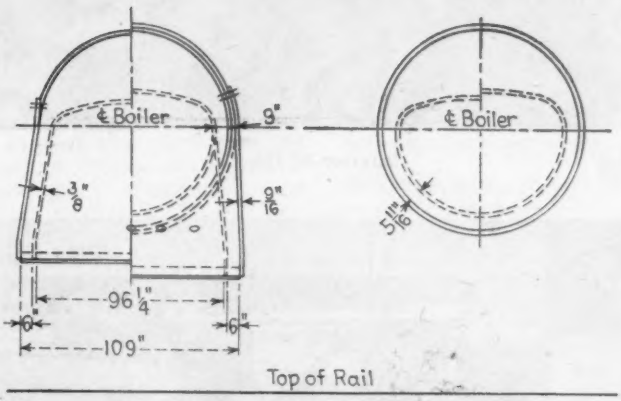
* These dimensions apply to the locomotive as delivered by the builder with 75-in. driving wheels. When these wheels are replaced with the 79-in. set, the working boiler pressure will be increased to 290 lb. per sq. in. and the rated tractive force will be 62,400 lb.



The New York Central Class S-1a Locomotive Built by the American Locomotive Company



The Back End of the Boiler in the Erecting Shop



Cross-Sections of the Boiler

complete boiler performance and capacity tests at Selkirk which will be followed early in 1946 by road tests to determine maximum capacity and efficiency of the locomotive.

The Boiler

The boiler has been increased both in diameter and length from that of the Class L-4 locomotive. The outside diameter of the third course is 100 in. and the top of the boiler is practically at the clearance limit, which precludes the employment of a steam dome. Grate area has been increased from 75.3 sq. ft. to 100 sq. ft. and the depth of the combustion chamber from 63 to 92½ in. The length of the tubes has been reduced from 20 ft. 6 in. to 19 ft. The boiler has been designed for a maximum working pressure of 290 lb. which is required with the 79-in. driving wheels.

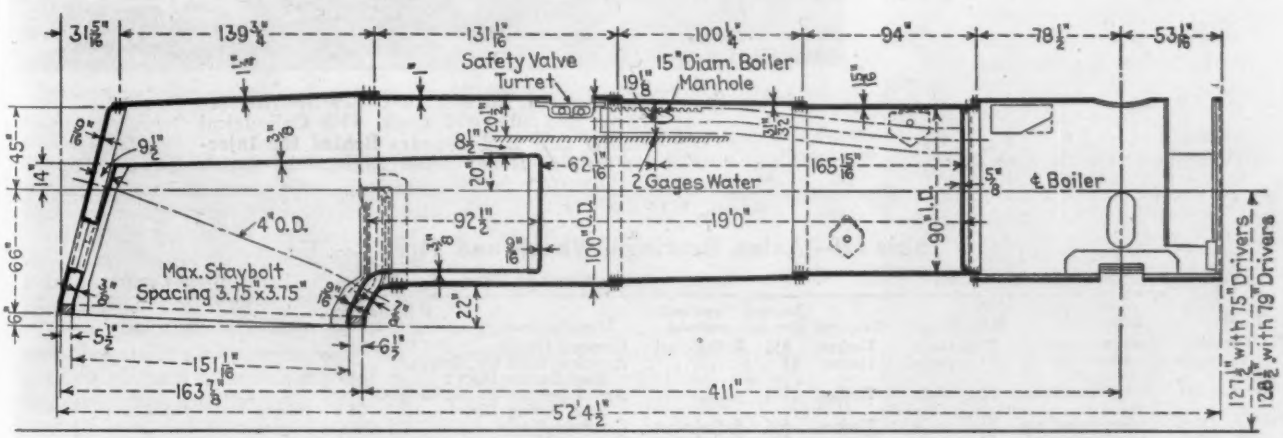
In lieu of a dome, from which to collect steam, the steam dry pipe, closed at the rear end, has a series of 28 1-in. transverse slots across the top, each with a clear chord length of 5 in. The dry pipe, 11 in. in inside diameter, has an internal cross-sectional area of 95 sq. in. The steam-gathering area through the slots is 140 sq. in.

Baffle plates which extend out below these openings on each side of the steam pipe have proved effective in preventing

Table II—General Dimensions and Proportions of the Boiler

Steam pressure, lb.	275*
Diameter first ring, inside, in.	90
Diameter third ring, outside, in.	100
Sheet thickness, in.:	
Smokebox	1/4
First ring	15/16
Second ring	21/32
Third ring	1
Back head	9/16
Side sheets	9/16
Roof sheet	1¼
Furnace door sheet	3/8
Furnace side sheets	3/8
Furnace crown sheet	3/8
Combustion chamber	3/8
Front tube sheet	3/8
Back tube sheet	9/16
Firebox length, in.	151 1/16
Firebox width, in.	96¼
Water space, front, in.	6½
Water space, back, in.	5½
Water space, sides, in.	6
Combustion chamber length, in.	92½
Arch tubes, number and diameter, in.	5—4
Flues, number and diameter, in.	177—4
Flues, thickness, in.	No. 9 BWG
Tubes, number and diameter, in.	55—2¼
Tubes, thickness, in.	No. 11 BWG
Length over tube sheets, ft.-in.	19—0
Net gas area through tubes and flues, sq. ft.	10.57
Superheater, type	E
Fuel	Soft coal
Grate area, sq. ft.	100
Feedwater heater, type	Worthington
Heating surfaces, sq. ft.:	
Firebox and comb. chamber	460
Arch tubes	57
Firebox, total	517
Tubes and flues	4,115
Evaporative, total	4,632
Superheater	1,977
Combined evaporative and superheater	6,609
Boiler proportions:	
Firebox heating surface per cent comb. heating surface	7.82
Tube-flue heating surface per cent comb. heating surface	62.26
Superheat surface per cent comb. heating surface	29.91
Firebox heating surface ÷ grate area	5.17
Tube-flue heating surface ÷ grate area	41.15
Superheat surface ÷ grate area	19.77
Combined heating surface ÷ grate area	66.09
Gas area, tubes-flues ÷ grate area	0.1057
Evaporative heating surface ÷ grate area	46.32
Tractive force ÷ grate area	623
Tractive force ÷ evap. heating surface	13.46
Tractive force ÷ comb. heating surface	9.43
Tractive force × dia. drivers ÷ comb. heating surface	707.5

* These dimensions apply to the locomotive as delivered by the builder with 75-in. driving wheels. When these wheels are replaced with the 79-in. set, the working boiler pressure will be increased to 290 lb. per sq. in. and the rated tractive force will be 62,400 lb.



Sectional Elevation of the Boiler of the New York Central Class S-1a Locomotive

moisture carryover. These are 50 in. in length and are welded at the ends to vertical end plates which fit over the steam pipe and extend up close to the inside of the boiler shell at the top.

The shell courses of the boiler are carbon-silicon steel. This material is estimated to have permitted a reduction in weight of about 7,000 lb. as compared with carbon steel. Construction details follow closely the boilers of the L-4 class. The inside firebox is welded throughout. The circumferential wrapper and outside throat-sheet seams and the butt joints of shell courses at ends of longitudinal seams are seal welded. The usual seal welding has been made in the vertical seams of the outside firebox above the mud ring.

The American arch is carried on five 4-in. arch tubes. Coal is fired by a Standard HT stoker with the engine on the tender. The grates are Firebar. The feedwater equipment consists of the Worthington No. 7SA feedwater heater and a Nathan No. 4000 injector on the right side. A Barco low-water alarm is applied.

One of the bottlenecks in the maintenance of uninterrupted road service of steam locomotives in modern fast long-distance train movement is limited ash-pan capacity. The ash pan on the S-1a locomotive has a volume of 86 cu. ft. with four hoppers. That on the L-4a was limited to 50 cu. ft. The ash-pan volume, in cubic feet per square foot of grate area, is .86 on the S-1a, .66 on the L-4a and .76 on the J-3a locomotives. The body of the pan is of welded construction and the hoppers are cast steel.

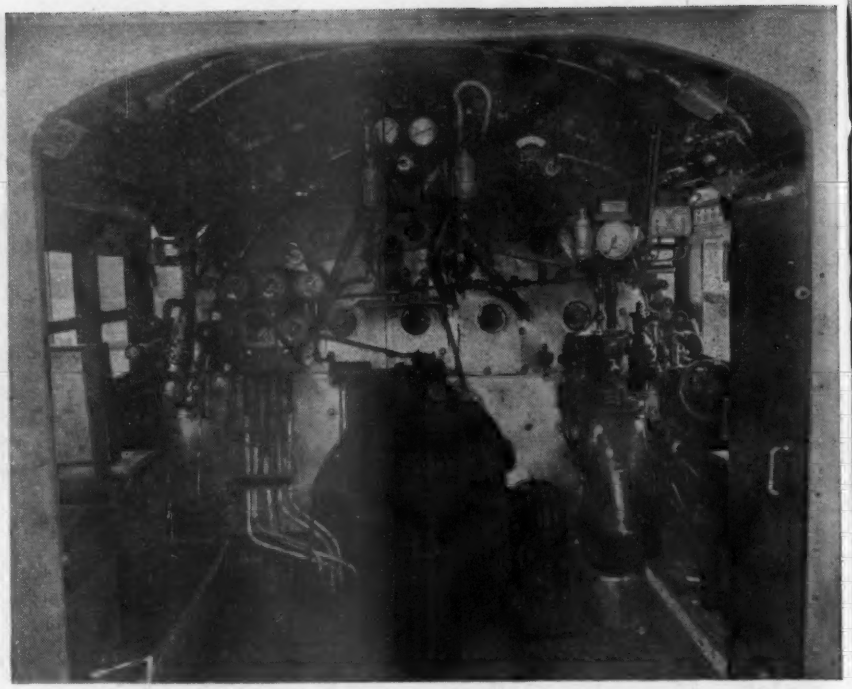
The front ends are the railroad's Selkirk type similar to those on the Class L-4 locomotives.

Running Gear

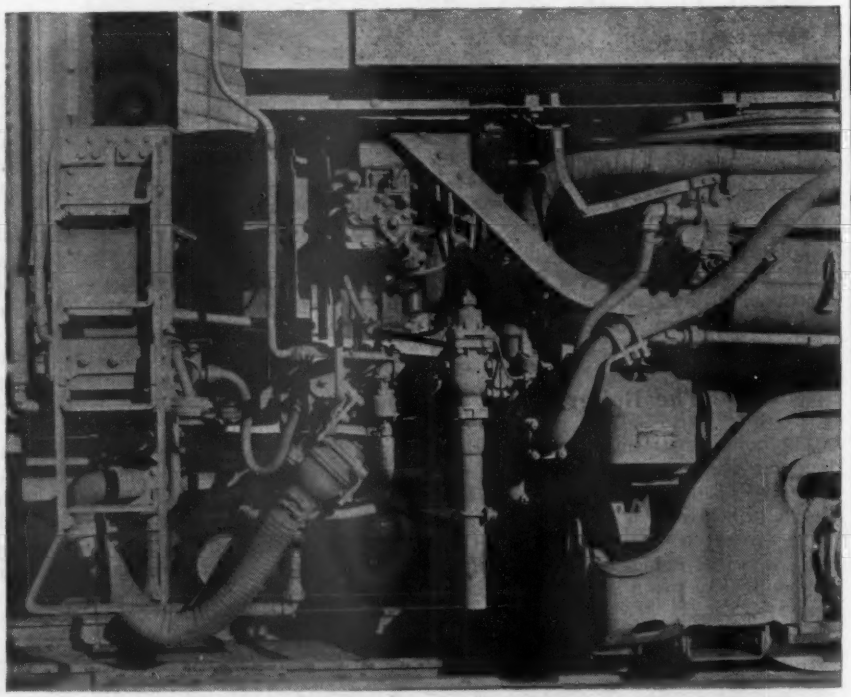
The foundation of the locomotive is a cast-steel engine bed which includes the locomotive cylinders with integral back cylinder heads, the air-pump bracket, and the main reservoir. The boiler is supported by sliding shoes at the second course and at the front and rear ends of the firebox.

The driving wheels are mounted on hollow-bored axles and the roller-bearing assemblies are of the Timken split-housing type with two-roll bearings. Alco lateral motion devices are applied on the front and intermediate pairs of driving wheels. They permit a controlled lateral of 5/8 in. and 5/16 in. per side, respectively.

The engine truck has a roller center-



Interior of the Cab



The Injector, No. 8-A Air-Brake Distributing Valve, and Blow-Off Cock, with Cylindrical Muffler (the End Appears Behind the Injector Suction Hose) Below Right Side of Cab

Table III—Axles, Bearings, Wheels and Tires

	Axles				Wheels or Tires			Wheel Centers		
Location	Material	Manufacturer	Bearings	Journal size, in.	Type and material	Manufacturer	Diameter, in.	Type	Manufacturer	Diameter, in.
Front truck ..	Carbon-vanadium	Shop made	Timken	8¼	Rolled steel	Carnegie-Illinois	36	.....	.....	..
Drivers, main.	Carbon-vanadium	Shop made	Timken	13	.....	American Loco. Co., Railway Steel Spring Div.	75	Boxpok	G.S.C.	68
Drivers, other.	Carbon-vanadium	Shop made	Timken	12⅜	.....	American Loco. Co., Railway Steel Spring Div.	75	Boxpok	G.S.C.	68
Trailer, front.	Carbon-vanadium	Shop made	Timken	6½	Rolled steel	Carnegie-Illinois	36	.....	.....	..
Trailer, rear..	Carbon-vanadium	Shop made	Timken	7½	Rolled steel	Carnegie-Illinois	44	.....	.....	..
Tender	Plain carbon steel	Shop made	Timken	6½	Rolled steel	Carnegie-Illinois	41	.....	.....	..

ing device for the bolster and a combination coil and elliptic spring suspension. The truck wheels are 36 in. in diameter and the inside journals are fitted with Timken roller bearings. The front wheels of the four-wheel trailing truck are 36 in. and the rear 44 in. in diameter. These axles are fitted with outside Timken roller-bearing boxes.

The locomotive is driven by a complete set of Timken roller-bearing rods. These include bearings on the crosshead wrist pin and the four crank pins. The roller bearings are mounted on the crank pins and the rods with spun-brass liners are slipped over the outside bearing races. A single rod on each side leads from the main to the front driving wheels; in order, outside of this on the main pin, are a main-to-intermediate side rod, the main-rod back end, and another main-to-intermediate side rod. Between the ends of the two main-to-intermediate rods on the intermediate pin is the front end of the back side rod.

The one-piece pistons are of electric cast steel designed for the railroad's lip-type packing rings. The hollow piston rod is of Timken alloy steel with the Timken type of crosshead connection. The crosshead shoe is of aluminum. The guides are not attached to the rear cylinder heads.

In counterbalancing the locomotive only the main driving wheels are cross-balanced. The total revolving weights on each side of the locomotive amount to 3,064 lb. and the reciprocating weights to 1,547 lb., of which 25 per cent is balanced. This requires an average overbalance per wheel of about 97 lb. and leaves a reciprocating unbalance per ton of total engine weight of 4.94 lb.

The reciprocating parts and crank pins, with the exception of the front, are chrome - nickel - molybdenum steel. The main and side rods are manganese-vanadium, and the locomotive axles carbon-vanadium steel. The crank pins in the front drivers are of carbon steel.

Loop type hangers are used in the driving and trailer spring rigging of this locomotive. Coil springs are inserted in the hangers at the engine-bed connections in front of the No. 1 driving wheels and at the connection to the trailer frame back of the rear trailing-truck axle.

Steam Distribution System

The 14-in. steam-distribution valves are driven by the Baker valve gear, with needle bearings. This gear provides a maximum travel of 8½ in. The valve motion is controlled by the Franklin Precision reverse gear which is attached to a bracket on the engine bed and not to the boiler. The Hunt-Spiller lightweight valves are fitted with bronze Duplex lip valve rings.

The larger boiler diameter permitted better superheater proportions. Particular attention was given throughout the steam passages from the boiler to the exhaust to bring the pressure drop to the minimum.

The minimum area through the superheater tubes is 86.6 sq. in. This compares with 70.5 sq. in. on the L-4 class. In the table is shown a comparison of the cross-sectional areas of the chain of steam passages.

Lubrication

One Nathan DV-8 42-pint lubricator is applied on the right side of the locomotive. From this lubricator are two feeds to the steam pipes, two feeds to the cylinders, one feed, with a four-way distributor, to the guides, and one feed to the stoker engine.

The chassis lubrication is by Alemite and Rex oil fittings. Alemite soft-grease fittings are used on the valve gear, including the Valve Pilot fittings, on the radial buffer, on the valve-steam crossheads, on the water-scoop piston rod, and on the lateral-motion-device spring seats. Alemite fittings using valve oil are applied on the driving-box pedestal faces. Rex oil fittings are installed for engine-truck-box, trailer-truck-box, and tender-truck-box pedestals, and on the crank pins and roller-bearing wrist pins. The power reverse-gear cylinder is lubricated by a Norgren No. 401-4 lubricator with Alemite soft-grease fittings on the reverse-shaft bearings and the reach-rod connection.

Alemite hard grease fittings are applied on the back ends of the eccentric rods.

Engine oil is used to lubricate the firebox expansion-shoe castings, engine-truck and tender-truck center plates, and miscellaneous points.

Spring-rigging pin and loop connections are lubricated with Alemite soft-grease fittings.

The cab is built of aluminum plates throughout and is entirely supported on the boiler by cantilever beams. Aluminum is also used for such parts as running boards, front platform and air-pump shield, the smoke-lifting shields at the sides of the front end, casings, gauge boards, etc.

Cab Fittings

Two saturated-steam turrets are mounted on the boiler just ahead of the cab, one on the right and the other on the left side. The right-hand turret provides connections for the cab radiator, the smoke consumer, the coal pusher, the headlight generator, and the injector. From the left turret steam is taken for the steam-heat reducing valve, the stoker, the feedwater pump, and the coal sprinkler. Superheated steam is furnished for the blower and the locomotive whistle. The whistle is mounted beside the stack on the smokebox.

The headlight generator is placed back of the rear driver on the right side of the locomotive. The exhaust is piped to the ash pan.

The locomotives are equipped with a Vapor 2½-in. steam-heat reducing valve.

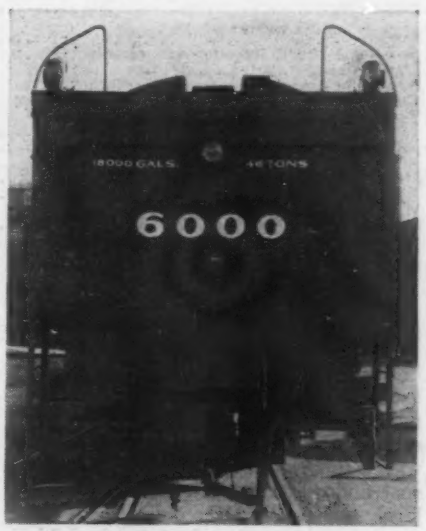
Table IV—Steam Passage Areas (Sq. In.) New York Central Class S-1a 4-8-4 Type Locomotive

	J-3	L-3—L-4	S-1a
Internal area of dry pipes	56.7	69.0	95.0
Area of dry-pipe slots	...	...	140.0
Minimum area through superheater tubes	61.8	70.5	86.6
Area past throttle valves, wide open	59.5	73.6	98.4
Internal area of one steam pipe	50.2	56.7	63.6
Port area one valve bushnig at 50 per cent cut-off	30.1	29.2	30.5
Minimum area of passage, one end of cylinder to valve bushing	42.9	51.8	53.2
Port area of one valve bushing	76.3	79.6	90.4
Exhaust port area of one valve bushing at end of piston stroke	70.0	69.3	70.9
Available exhaust area around valve bushing, end of piston stroke	50.0	56.0	57.0
Exhaust area at end of valve bushing	76.0	73.1	75.0
Exhaust area one side of exhaust stand	52.0	52.0	62.0
Area exhaust nozzle	38.5	39.9	44.2
Area one cylinder	397.6	530.9	490.9

The sand-box arrangement is unusual. On top of the boiler is an aluminum sand box of limited capacity from which two oval-shaped tubes extend down the sides of the boiler under the jacket to right and left steel boxes located under the running boards. The New York Air Brake sand traps at the lower ends of these sand boxes distribute sand in front of the front and main drivers.

The air brakes are the New York Schedule 8ET with relay valves. The two 8½-in. cross-compound air compressors are supported directly on the bed casting under the smokebox. A fin-tube aftercooler is placed in the air line between the two main reservoirs. Removable portions of the front deck permit access to the air filters. The air compressors are built with integral lubricators.

All wheels on the locomotive and tender are braked. The engine-truck



The Rear End of the Tender

brakes are operated by a single cylinder; the driver brakes, by two cylinders, one on each side of the locomotive, and the trailer brakes, by two cylinders, one on each side.

The Tender

When the characteristics of the S-1 class locomotive were first receiving consideration in 1942 by the equipment engineering department of the railroad, authority was secured to build five tenders of the bed type carried on one four-wheel leading truck and five pairs of wheels mounted in pedestals on the tender-bed casting. The objective of this design was to provide approximately the same coal and water capacity as that of the large tenders of the conventional type carried on two six-wheel trucks which were received with the Class L-3 and L-4 4-8-2 type locomotives, but to have a wheel base about 6 ft. shorter. This would permit the 4-8-4 type locomotive, with its longer engine-wheel base, to be handled on the 100-ft. turntables generally available on the main line between New York and Chicago.

These tenders have a coal capacity of 46 tons and carry 18,000 gal. of water. Incorporated in them, as the result of comprehensive studies and road tests, is the venting system for scooping water without reducing speed similar to that built into the large tenders behind the L-4 class locomotives.*

The tanks of these tenders are of conventional riveted construction. The ratio of loaded to light weight is somewhat higher than that for the earlier high-capacity tenders with two six-wheel trucks.

The tender wheels are all 41 in. in diameter. Timken journal bearings are installed throughout.

Before locomotive No. 6000 was completed an order had already been placed for 25 additional S-1 locomotives. These locomotives, Class S-1b, are now being delivered. Because of the inability to test the S-1a locomotive before the others were ordered, the length of the combustion chamber in the boilers of the latter have been reduced from 92½ in. to 81¼ in. and the tubes and flues correspondingly lengthened. These locomotives have 79-in. driving wheels and the cylinder diameter has been increased from 25 to 25½ in. to accommodate a working pressure of 275 lb.

A further change in the S-1b locomotives is the trailer which has two pairs of 41-in. wheels. This change from 36-in. front and 44-in. rear wheels has permitted a further increase in ash-pan volume to 98 cu. ft. and has permitted the design of a pan with better slopes.

A twenty-seventh locomotive will be built to the same proportions as the 25 S-1b class. It will differ from them in that the Franklin poppet-valve system of steam distribution will be installed. This locomotive will be designated as Class S-2a, and is to be subjected to comprehensive acceleration, capacity and performance tests for direct comparison with the S-1 class, which has large piston valves and Baker valve gear.

Partial List of Materials and Equipment on the New York Central S-1a 4-8-4 Type Locomotive

Engine bed; engine and trailer trucks; bumper; pilot	General Steel Castings Corp., Eddystone, Pa.
Lateral motion device on front and intermediate drivers	American Locomotive Co., New York Franklin Railway Supply Co., Inc., New York
Radial buffer; power reverse gear	
Driving boxes; crank pins (main intermediate and rear); roller bearings on main and side rods and axles; crossheads; crosshead shoes	The Timken Roller Bearing Co., Canton, Ohio
Springs, driving	Railway Steel Spring Div., American Locomotive Co., New York
Bearings and brass castings	Magnus Metal Div., National Lead Co., New York
Air brakes and air signals	New York Air Brake Co., Watertown, N. Y.
Brake shoes	American Brake Shoe Company, New York
Automatic train control	General Railway Signal Co., Rochester, N. Y.
Piston rod, hollow	The Timken Roller Bearing Co., Canton, Ohio
Piston packing; rod and valve-stem packing	U. S. Metallic Packing Co., Philadelphia, Pa.
Piston valve; gun-iron castings; cylinder and valve bushings	Hunt-Spiller Manufacturing Corp., Boston, Mass.
Cylinder cocks; ashpan flusher cock; right blower valve; blow-off cocks; gauge-glass guards	
Valve gear	The Okadee Co., Chicago
Left blower valve	The Pilliod Company, New York
Lubricator, mechanical	The Lunkenheimer Co., Cincinnati, Ohio
Lubrication—grease fittings	Nathan Manufacturing Co., New York
Power reverse-gear lubricator	Alemite Div., Stewart-Warner Corp., Chicago
Brick arch	C. A. Norgren Co., Denver, Colo.
Lagging	American Arch Co., Inc., New York
Smokebox hinges	Johns-Manville Sales Corp., New York
Staybolts, flexible	The Okadee Co., Chicago
Steam-heat reducing valve	Flannery Bolt Co., Bridgeville, Pa.
Superheater; pyrometer	Vapor Car Heating Co., Inc., Chicago
Throttle lever and throttle valve	The Superheater Co., New York
Washout plugs	American Throttle Co., New York
Injector; boiler checks	Huron Mfg. Co., Detroit, Mich.
Feedwater heater	Nathan Manufacturing Co., New York Worthington Pump and Machinery Corp., Harrison, N. J.
Feedwater-heater pump control valve	The Lunkenheimer Co., Cincinnati, Ohio
Piping	A. M. Byers Co., Pittsburgh, Pa.
Steam-pipe casing	American Locomotive Co., New York
Steam pipe to headlight generator	Seamlex Co., Inc., Long Island City, N. Y.
Blow-off mufflers	National Aluminate Corp., Chicago
Stoker	Standard Stoker Co., Inc., New York
Stoker by-pass control valve	The Lunkenheimer Co., Cincinnati, Ohio
Fire door	Standard Fire Door Co., Toledo, Ohio
Coal sprinkler; steam and air gauges; safety valves	Manning, Maxwell & Moore, Inc., Locomotive Equipment Div., Bridgeport, Conn.
Low-water alarm	Barco Manufacturing Co., Chicago
Grates	Waugh Equipment Co., New York
Running boards	Aluminum Co. of America, Pittsburgh, Pa.
Cab windows	O. M. Edwards, Inc., Syracuse, N. Y.
Headlight; conduit and wiring fittings; turbo generator	The Pyle-National Co., Chicago
Water columns; whistle	Nathan Manufacturing Co., New York
Whistle blower	Viloco Railway Equipment Co., Chicago
Bell ringer	Railway Service & Supply Corp., Indianapolis, Ind.
Sanders	New York Air Brake Co., Watertown, N. Y.
Speed and cut-off indicator and recorder	Valve Pilot Corp., New York
Marker lamps	Lovell-Dressel Co., Arlington, N. J.
Steam-heat connections; pressure reducing valves	Vapor Car Heating Co., Inc., Chicago
Flexible connections between engine and tender	Barco Manufacturing Co., Chicago
Tender:	
Brake beams; clasp brake; slack adjuster	American Steel Foundries, Chicago
Driver brake	American Brake Div., Westinghouse Air Brake Co., Swissvale, Pa.
Coal pusher	Standard Stoker Co., Inc., New York
Pilot and tender couplers	National Malleable and Steel Castings Co., Cleveland, Ohio
Draft gear	Waugh Equipment Co., New York
Strainer	The Okadee Co., Chicago
Tank valve	Crane Co., Chicago
Paint	E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.

* The high-speed water scoop and the system of venting in these tenders were described in the *Railway Age* July 22, 1944, page 149.

Debate Wage Case

(*Continued from page 479*)

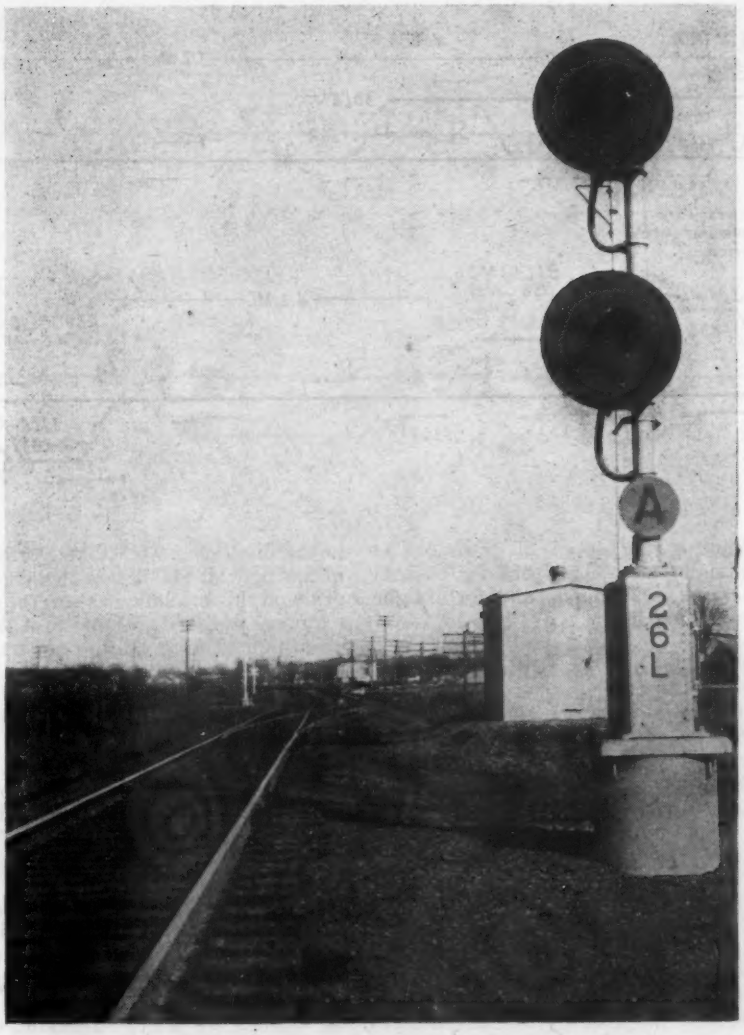
The solution will have to be in our hands. No one is going to help us. If your management can sit down with your representatives and work out a solution based on our own situation, I believe the accomplishment will redound to our mutual advantage. I also believe that if the problem is not solved in that way, the result may be tragic indeed. The trustees and I believe you and your leaders, as well as management, have a very important decision to make in the near future.

The Old, Old Story

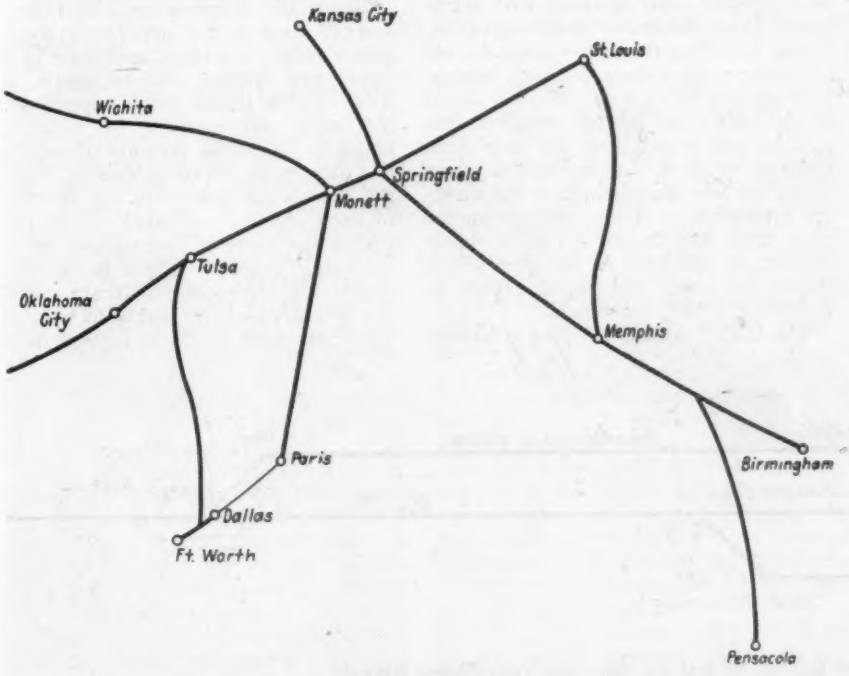
"We are anxious to do everything possible for you, as long as we have something with which to work and you have seen many instances of this, but we are dealing with the old story of the apple pie—just like our revenues, the pie is only so large, no matter how you cut it. The pie obviously cannot be made larger by higher wages. For the reasons I have given you I believe it will be made smaller. Nothing is quite so pleasant or so popular as to be able to pay higher wages, but life is not all beer and skittles, and if we are half the men and women I think we are, we are able to face the facts and work out the answers."

Frisco Installs C.T.C. on 42 Miles

Reduction in train time effects savings of 52 per cent on the cost of the new signaling system, or 37 per cent including also the cost of track changes at sidings



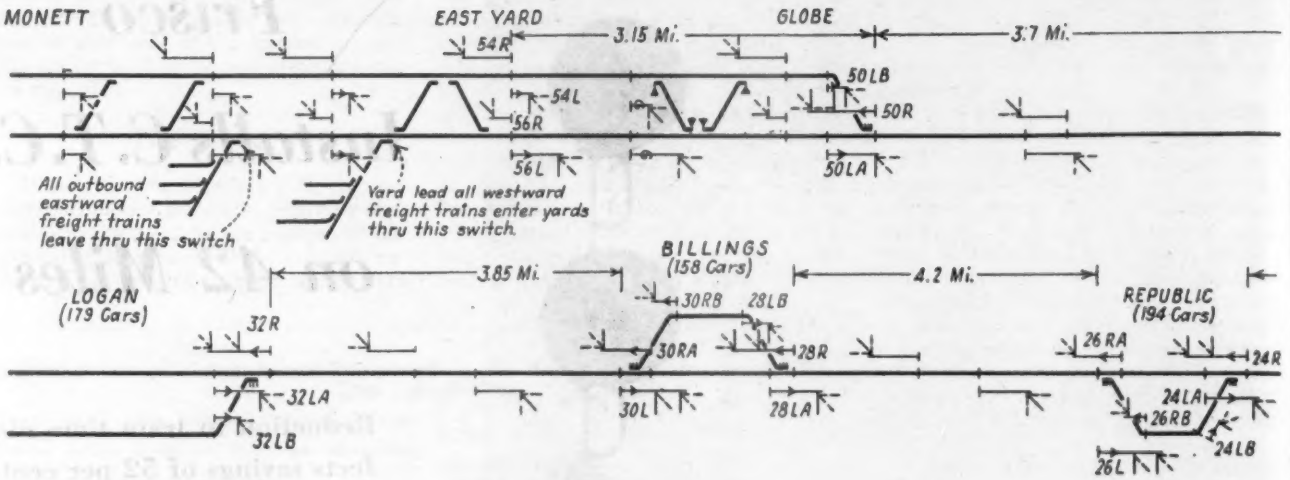
Above—Power Switch and Signals at West End of Siding at Republic—Below—Map of the Frisco, Showing the Importance of the Springfield-Monett Section



As a means for increasing track capacity and expediting train movements, the St. Louis-San Francisco has installed centralized traffic control on 38.5 miles of single track and 3.2 miles of double track between Monett, Mo., and Springfield. This section carries traffic to and from several different routes. One of the main routes of the Frisco is between St. Louis, Oklahoma City and Ft. Worth, via Springfield, Monett and Tulsa. A second route is between St. Louis and Paris, Tex., via Springfield, Monett and Ft. Smith. Another route is between St. Louis and Wichita via Springfield and Monett. These routes are crossed at Springfield by another through route between Kansas City and Memphis, Birmingham and Pensacola. Cars are interchanged at Springfield and at Monett between these various routes.

Thus this Springfield-Monett section handles more traffic than other adjacent territories. The schedules include five passenger trains and four through freight trains each way daily in addition to a local freight each way daily except Sunday. Extra trains are operated as required so that the totals average about 21 trains each way daily.

A single-track line extends from the passenger station in Springfield to Nichols, 2.9 miles, all passenger trains being operated over this route. Signal DR, which is just west of the Springfield passenger station layout, is the first westward C.T.C. signal. The freight trains are operated over a double-track line between Nichols and North Yard. On this freight line the westward home signals, CR and ER, at Nichols are the first westward C.T.C. signals. The signals at Nichols are a part of a mechanical interlocking which also includes various switches and the crossing between



the east-and-west track and the Kansas City-Memphis line.

Single-track main line extends 35.6 miles from Nichols Junction to Globe, with double track from there to Monett. On the double track each track is signaled for train movements in either direction by C.T.C. The first eastward C.T.C. signals are at East Yard, which is 3.2 miles from the end of double track at Globe. Thus the C.T.C. territory includes 3.2 miles of double track and 38.5 miles of single track. On double track, from the west end of C.T.C. at East Yard to the passenger station at Monett, automatic block signals are in use, each track being signaled for traffic in both directions. Trains move at restricted speed on signal indication between these points.

Curves Numerous

The elevation above sea level is 1,275 ft. at Nichols, 1,258 ft. at Verona, 1,428 ft. at Globe and 1,300 ft. at Monett. Except for both ways up the Globe hill the grades on this territory are rolling with short sections of 0.8 per cent up to 1.0 per cent grade. Globe is at the crest of a ridge; a ruling grade of 0.99 per cent ascends westward to Globe for about 3 miles, and a grade of 0.7 to 0.8 ascends eastward to Globe for about 2.5 miles. The 3 miles of 0.99 per cent is the ruling grade which cuts the tonnage rating westward to 2,600 tons as compared with 3,250 tons eastward.

Curves are numerous but most of them are 2 deg. or less, with a few ranging up to a maximum of 3 deg.; the curvature, therefore, in general, is not a factor in limiting the speed of trains. The maximum permissible speed for passenger trains is 70 m.p.h. and for freight trains 50 m.p.h.

Layout of Sidings

There are seven single sidings between Nichols and Globe—at Nichols, Brookline, Republic, Billings, Logan, Aurora and Verona. As a part of the C.T.C. project electric switch machines and semi-automatic signals controlled from the C.T.C. machine were installed at the switches of all these passing tracks, with two exceptions. The east switch at Nichols Junction is in the mechanical interlocking at the crossing. The west switch at Aurora was previously, and still is, connected in a mechanical interlocking which also protects a crossing with the Missouri Pacific.

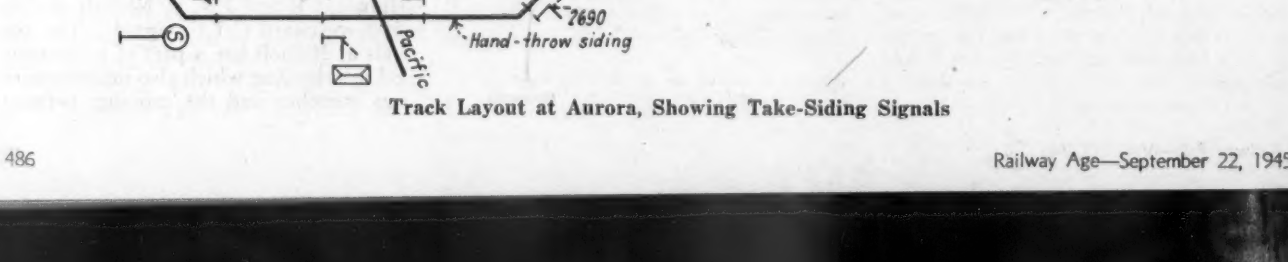
Also at Aurora there is a short siding with hand-thrown switches, as will be explained later.

Prior to the installation of C.T.C. this territory had been equipped with semaphore type automatic block signaling. When installing the new system the old semaphores were discarded, new searchlight signals being used. The old signal masts were sand blasted, repaired, repainted and installed at the new locations as required. At each end of every siding the new signals include the standard arrangement of high signals on the main track and dwarfs for leave-siding signals, as indicated in the plan which shows the track and signal layout at Brookline, which is typical.

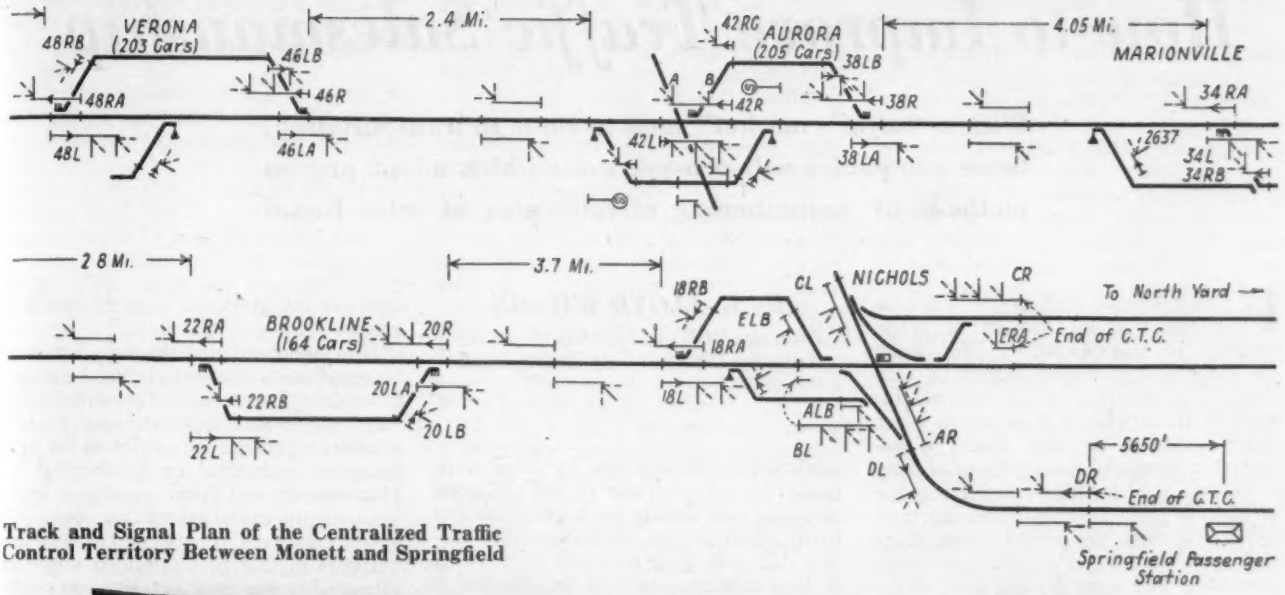
The C.T.C. control machine is located in the dispatcher's office at North Yard in Springfield. The illuminated track diagram on this machine has several special features. Above each portion of the diagram representing a section of track between sidings is a set of two traffic-direction arrows each of which has an indication lamp. When traffic is lined eastward between two sidings the upper lamp and arrow are lighted, or, when traffic is lined westward the lower lamp and arrow are lighted. These indication lamps are an aid to the dispatcher in knowing at a quick glance how the traffic is lined.

On each section of the track diagram representing a siding is an indication lamp. When a train is headed into a given siding to wait for a time the dispatcher flips a toggle switch just below the symbol for the said siding, which causes the indication lamp to be lighted. This lamp is thus a reminder of the location of the train. After the train departs the toggle switch is thrown back to the normal position which extinguishes the lamp.

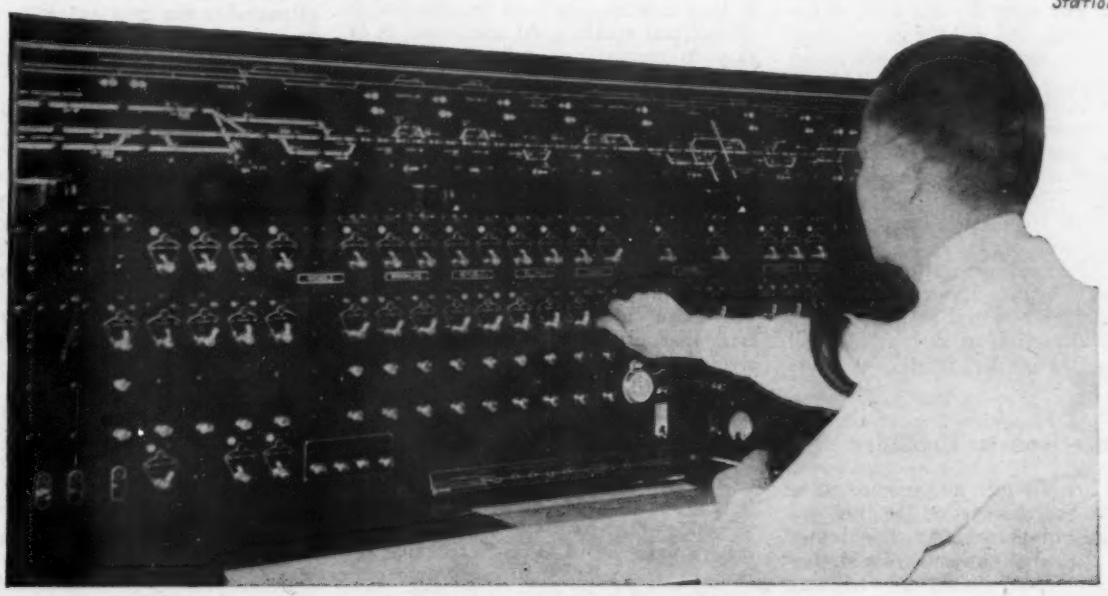
Below the diagram are two rows of levers; those in the upper row control power switch machines, and those in the lower row control semi-automatic signals. These levers are equipped with the usual arrangement of indication lamps to repeat the position of switches and aspects displayed by signals. Under the two switch levers for the two ends of each siding is a small etched plate giving the name of the station, as, for example, "Logan." These name plates enable the dispatcher to locate quickly the levers which he wants to use. An automatic train graph is located in the



Track Layout at Aurora, Showing Take-Siding Signals



Track and Signal Plan of the Centralized Traffic Control Territory Between Monett and Springfield



C. T. C. Control Machine in Offices at East Yard

top of the desk at the bottom of the panel.

At Aurora is a short siding on the south side of the main track which is used occasionally by passenger trains, but not often enough to warrant the installation of power switch machines; therefore, the hand-throw switch stands were left in service. As a part of the C.T.C. project electric locks were installed on these switches, and take-siding indicators controlled by the dispatcher were installed to direct trains to stop and enter the siding; dwarf signals were installed to direct trains to leave the siding.

Each take-siding indicator consists of a lamp unit with a ground glass cover lens 8⅜ in. in diameter, the unit being mounted on a mast so that the center is about 10 ft. above the level of the top of the rail. No other signal unit of any sort is mounted on this mast. Normally the lamp in this indicator is extinguished. When the dispatcher wants a westbound train, for example, to enter this hand-throw siding he sends out a control that causes the lamp to be lighted which makes a large white letter "S" stand out in a black background. This indicates that the train is to stop short of the switch, while the trainman throws the switch, and then the train is to enter. When the train is in the clear the switch is placed normal and the take-siding indicator is extinguished, making it necessary to code for each move.

Westbound interlocking home signal 42R must be at the Stop aspect in order for the westward take-siding indicator to display the "S" aspect. Likewise the eastward interlocking home signal 42L must be at the Stop aspect in order for the eastward take-siding indicator to display the "S" aspect. This insures that trains will receive an Approach aspect on the last signal before arriving at a take-siding indicator.

When a train on this siding desires to depart, as for example an eastbound train, the trainman will communicate with the dispatcher for authority to open the switch, after which, if the block is clear, the leave-siding dwarf will display a proceed aspect. With the switch reversed the aspect of the dwarf signal is green if two or more blocks are clear, or yellow if only one block is clear and the second occupied by a train of the same direction.

After the centralized traffic control had been in service for several months a study showed that the reduction in train time effected a saving which represented 52 per cent on the cost of the signaling system, or 37 per cent on the total costs including the changes in passing sidings as well as the signaling.

This C.T.C. installation was planned and installed by signal forces of the St. Louis-San Francisco, under the direction of R. W. Troth, signal engineer, the major items of equipment being furnished by the Union Switch & Signal Company.

How to Improve Traffic Salesmanship

With a "buyer's market" soon to come in transportation, those companies will prosper most which adopt proven methods of strengthening effectiveness of sales forces

By G. LLOYD WILSON

Professor of Transportation & Public Utilities, University of Pennsylvania

IT requires some audacity to write on the controversial subject of salesmanship in transportation. Yet there are some things which should be said about it at the risk of the ridicule invited by those who rush in where wiser men hesitate to venture. Every transportation company management worthy of being called such is considering the problem of attracting and retaining traffic in the dawning period when there will again be a buyer's market in transportation. For several years past, transportation companies and the government transportation agencies have been doing their utmost to minimize ton-miles and passenger-miles. Transportation capacity has been expanded by improved efficiency and sheer determination despite inadequate equipment and restricted facilities.

But all this pressure on transportation facilities will soon fade away and the problem, once more, will be to attract traffic to fill equipment and utilize facilities so as to realize the volume necessary to achieve low unit-costs of operation; and attraction of such traffic will require aggressive and intelligent salesmanship.

Questions to Consider

Where are the men and women to be found who will be needed for this job. What traits of personality should they possess? In what subjects should they be trained? How should this training be given? What "screening tests" should be used to select and retain those most likely to be successful and to find other work for those unlikely to succeed in competitive salesmanship? How should transportation salesmen be paid in order to compensate them for their production and to stimulate them to continued and greater productivity? What are the opportunities for promotion to executive positions from the ranks of salesmen?

Realistic management will recognize that these questions must be faced and appropriate policies and plans worked out. Such questions cannot be ignored because they are being asked by those who are considering whether or not to enter or remain in sales work and whether to work for transportation companies or in other lines of business. There are those who believe that salesmanship is better appreciated and more profitable in other business than in transportation. Whether or not this belief can be demonstrated to be true or false, the conviction must be dispelled if transportation companies are to obtain and retain a sufficient number of effective salesmen to get business for their companies in the post-war period. A good salesman can usually get a good job and many salesmen can sell successfully several different types of goods or services, so that inducements must be afforded to attract and retain good salesmen. It is easy to recruit and retain a force of mediocre and indifferent salesmen, and it is easy for a force of good salesmen to become indifferent and discouraged if their efforts are not supported, directed and encouraged.

It is the author's belief from extensive observation that salesmanship is an acquired skill. Salesmen are not "born" but "trained," just as musicians, artists, writers, lawyers, doctors or teachers are not "born" but made by training. It is true that different people are instinctively attracted to different vocations or professions; some have and others do not have traits of personality or a liking for one type of work or another. But the technique of salesmanship like that of any other vocation or profession must be learned by study or practice and experience—"the hard way." The work of others must be observed, critically appraised, and adapted to one's own personality and capacity.

The things which appear to get good results for others should be tried out to see how they work for us; and the things which produce bad results should be avoided or modified. It is a trial and error method, but the things tried should be thought out before, and the errors should not be repeated. Salesmanship is an art, based upon and molded by technique. No one knows all or even very much about it, and the same technique cannot be used by all salesmen or by the same salesman with different people whom he wishes to make customers. It may be said to be the art of meeting and dealing with people in such a way as to cause them to want to transact business with you. There is much difference of opinion on this point, but such is the author's opinion, for what it may be worth.

Where to Find Salesmen

Returning now to the questions raised at the commencement of the article, let us attempt to suggest some partial answers to the questions from this point of view.

It is suggested that the sales forces of transportation companies may be drawn from several reservoirs of potential salesmen: (1) from the present sales or solicitation organization; (2) from the sales forces of industrial or commercial establishments and from industrial traffic departments to the extent that sound policy of relationship between carriers and shippers dictate that salesmen might be attracted to the transportation companies from industry or to industry from transportation companies; (3) from the graduating classes of colleges and universities, particularly from institutions in which fundamental training is afforded in business administration, transportation and marketing; (4) from the rate and tariff bureaus and other departments of the carriers where there are men who may be found to have the qualification of personality and inclination toward sales work; (5) from other transportation companies when one company has reason to believe that the salesman can do better with them than with his present company; (6) from the sales forces of insurance companies and other organizations engaged in selling services; and (7) last, by no means least, from those returning from military service. No one of these sources should be relied upon to the exclusion of others, if a well balanced sales force is to be organized and developed. There are, the author believes, plenty of capable, actual or potential salesmen in these reservoirs, if transportation sales opportunities can be made attractive to get and keep them, and if adequate opportunities for training are afforded.

Necessary Personal Traits

Many books, articles and speeches have set forth the characteristics required in an effective salesman, and the subject is controversial. The author can only summarize his conclusions based upon his observation of those with whom he has come in contact who seem to enjoy selling and who appear to attract those to whom they sell.

1. A salesman should genuinely like most people. Perhaps no one can like and get along with everyone, but some people find it easier than others to remember their own shortcomings and like people despite their peculiarities, while others find it difficult to overlook or take these peculiarities into account sufficiently to like people. In selling, a sales representative is continually deal-

ing with different people and the difficulties of his work are maximized if he is continually irritated or annoyed by people.

2. It is not enough that a salesman likes people and likes being around with others, he must show people that he likes them by his words and his actions. This does not mean that he must be offensively obvious and "woo" every prospective customer, but he must be cordial and interested in what they are saying and doing. The author has repeatedly seen how even hostile people respond to sincere friendliness and interest. We all like to be appreciated and we usually respond to friendliness, just as we freeze up when we know or suspect that the other person is hostile or unfriendly. One needs only to see a skillful attorney win a hostile jury, or a speaker warm an antagonistic and critical audience, or a friendly salesman thaw out a cold prospect to be convinced of the power of friendliness.

3. Closely related if not inseparably connected with friendliness are good manners. It has been said that manners are the outward expression of inward good will, and who can doubt it? Good manners are not a negative code of refraining from being rude, coarse, raucous, blatant, intolerant, opinionated, domineering, overbearing, gossipy, and otherwise unbearable to most people, but are a positive code of treating others as we wish to be treated, with consideration, modesty, tolerance and courtesy. We all notice other people's manners and are outraged and repelled by those whose manners we resent, but often it is difficult from annoying or offending others by our own lapses from these standards.

4. There has been much discussion of the importance of personal appearance of salesmen. It is generally agreed that scrupulous personal cleanliness, clean and well pressed clothing and linen, well brushed shoes and hat are indispensable to successful salesmanship. There are those who are convinced that extreme styles in clothing are to be avoided, and that obviously expensive clothing is not desirable. Few prospective customers like to have their own clothing suffer by comparison with those worn by salesmen, and few people like salesmen to dress either like a moving picture leading man or like a broken-down bookmaker. If he stays within these bounds and lines of clothing, many, including this writer, believe that a salesman can and should dress in accordance with his own taste and financial means.

5. Sincerity and lack of pose should be rated high in the personal characteristics of a salesman. Sincerity comes from conviction that the thing he is selling, whether it be an article or service, is useful, necessary and honestly priced, and that he believes in his work, his company and himself. Salesmanship is not an act; it is a useful service, and should be practiced for what it is. People are prone to detect insincerity even if they are unable to say why they detect it.

6. Salesmen do much of their work and spend much of their time "on their own." The ability to continue to work without continual supervision and control, to decide what can and should be decided by the salesman without bothering his supervising officer with petty matters and, at the same time keeping his supervisor informed as to what he is doing and referring to him questions which the supervisor should decide or have decided, are attributes of a good salesman. A traveling agent of a large Eastern railroad put it this way: "When I am in the territory I must act as if I am the whole railroad; and then come back to the general office and account to my boss for what I did and why."

The salesman is not only on his own with respect to his job, but he has the problem of how to spend his time after business hours. Many excellent salesmen have failed to make and keep the grade because they could not solve the problem of what to do with themselves and what not to do after the "whistle blows." Every man must solve this problem for himself in his own way. There are social aspects to business relationships which can be developed after office hours which should not be ignored. There are things to read and enjoy which not only add to the salesman's general or specialized education and technical proficiency but will add to the enjoyment of the job through knowing why and how things are done or can be done.

Training Salesmen

If the point of view is accepted that good salesmen do not "burst into bloom" without training and development, the next step is to plan the necessary training. If the potential transportation salesman appears to have the traits of character and personality thought to be desirable attributes of a transportation salesman, then these traits must be implemented by training. There are many different ideas about sales training and one has to resort to dogmatism to refute the dogmatism of some of these views. There are some who believe that any standard course or training in salesmanship is satisfactory, either without modification or with only slight modification, in the training of transportation salesmen. A number of transportation companies have bought and used "canned" salesmanship courses for the training of their sales or solicitation forces on the theory that salesmanship is salesmanship whatever the field. So "pigs is pigs."

If salesmanship is the systematic endeavor to make it easy and attractive for others to do business with the company represented by the salesman, is it not logical that the salesman must know the services which his company can perform and the services his customers need? It is, one is inclined to conclude, not a matter of impelling, or living, or attracting, or "master-minding" anyone into doing anything. It has nothing to do with high pressure or low pressure or any other pressure methods. It is the facilitations of mutually necessary and desirable business relationships.

Transportation salesmen are engaged in selling transportation services. In order to do this effectively those who have been found to possess the traits of character referred to above should know what their prospective customers need and what their companies have to offer to supply these needs. It follows from this that transportation salesmen must know enough about their prospects' businesses as to know where they purchase their raw materials, where they market their finished products, what they manufacture or distribute, the channels used in marketing the goods, what the products are used for and what their competition is, so that the transportation companies' services may be offered intelligently. This implies that the salesmen have a good working acquaintance with their prospects' problems of supply and distribution so that they may help their prospects' traffic managers solve their problems.

Transportation sales training programs should include not only training in the technique of salesmanship but also training in:

(1) The facilities of their own and of competitive transportation companies —including points served, connections, schedules and transit time, special and terminal services available, routes, equipment of special types available, and related matters which will enable them to answer questions and to make suggestions as to how their companies can serve their customers;

(2) The elements of freight classification and rate-making, although sales representatives may and should refer technical classification and rate questions to be answered by their general freight rate departments;

(3) The principles of marketing practices and procedure, such as can be obtained from a general course or good standard modern text-book in marketing; and,

(4) The essentials of making necessary records of calls and of prospective business so that the necessary follow-up work can be done by the salesman, by his supervising officer, by sales representatives of their companies who are in contact with the other ends of the transactions, or by the representatives of connecting lines.

How to Provide Training

Much of this training can be started in school or college before the salesmen start their work, but it can also be done by well organized and well studied part-time courses conducted by the companies after the salesmen have commenced their work—particularly courses which are designed to give the salesmen instruction in the policies and practices of the respective companies. Other lines of business have gone far and are going further in courses in employee and salesman training; transportation companies should profit from their example and experience. Adult post-entry education and

training by universities, colleges, technical schools, and business institutions loom large in the significant developments in education and industry.

Many colleges, universities, technical schools and other educational institutions and qualified teachers in these fields are available and eager to assist industries in working out genuine programs of training of sales personnel and other employees for industries, either at their institutions in their regular evening or extension programs, or in cooperative courses tailor-made to suit the requirements of industries. The engineering, science and management war training program conducted by universities, colleges, technical schools and other institutions for the United States Office of Education assisted hundreds of thousands of employees in war industries or those engaged in work of importance to the war to increase their knowledge and skill. Classes in this program were conducted in university and college classrooms and laboratories, in schools and libraries, in industrial plants and wherever and whenever students and teachers could be brought together.

The services of schools, colleges and universities in adult education—cultural, scientific and vocational or professional—have only been well begun. More and more leaders in education, in industry, and in the profession are becoming convinced that cultural, scientific and professional education is a continuing lifelong process and that educational facilities should be made available to those who seek to enrich their lives and to increase their vocational proficiency. It is a tragic mistake for a man ever to consider that his education is complete.

Selecting Salesmen

How can transportation companies find out whether or not a man or woman in their employ or under consideration for employment has sales capabilities; and how can a person determine for himself whether he has them? Such questions cannot be answered dogmatically. Several approaches to an answer can be suggested: *First*, great progress has been made in the field of education in the development of different kinds of "aptitude tests." The evidence of the correlation of the tests with the things the tests undertake to discover are encouraging. These "screening tests" are available to be adapted to many uses by discriminating application. *Second*, many transportation sales executives have by the fruits of experience worked out practical procedures for winnowing out likely sales material. *Third*, some idea of whether or not one likes salesmanship and has some of the important characteristics which contribute to success in the field can be had by looking at oneself objectively and answering honestly some self-analytical questions. This is a difficult thing to do but very important if one is serious about finding a job in which he is a "natural." *Finally*, the importance of personnel selection, training, promotion and transfer to other work is so important that many progressive business enterprises have established, and many more will establish, organizations to select and train their employees as a major phase of industrial activity. Here, again, the opportunities for cooperation of education and industry are manifest.

One of the significant and interesting pioneer efforts to help transportation salesmen find themselves and to become effective members of the team is a booklet prepared by L. E. Clarahan, vice-president—traffic of the Wabash Railway, in 1937.[1] This valuable little book is not a sales manual nor an inspirational pep-talk, but an outline of the individual and cooperative characteristics which are indispensable to success in selling transportation service. Mr. Clarahan in this booklet suggests a number of questions which, if the prospective salesman answers honestly and follows the practices implied by the question, many of the problems of the selection of salesmen and their training into members of a sales team are simplified. Some of these questions are:

Do you like people?

Do you know what you are selling?

Do you know why you are selling it?

How about your appearance?

How about your manners, and how do you treat people?

How about your disposition?

How about your habits?

What kind of English do you speak and write?

How hard, consistently and intelligently do you work?

Do you make it easy for people to do business with your company?

Are you sufficiently curious to keep learning about your business?

Do you use your spare time to build useful business and social contacts and to improve your educational background?

Are you alert?

Can you "take it"?

Do you keep your boss adequately informed about the important things you are doing, including your successes or failures, or do you pester him with inconsequential matters?

Are you loyal to your boss and company?

Are you cooperative with your fellow employees?

How are your relations with those who report to you?

How well do you do your executive work—delegating work, keeping informed about it, helping those who need it, analyzing your work and territory, directing and planning your subordinates' efforts, and keeping your superiors informed by proper and regular reports.

Do you consciously and continually strive to improve yourself?

Do you give your company your best efforts and loyalty, and represent your company effectively and with dignity?

Do you organize and participate in special sales efforts?

Do you try to serve small as well as large customers?

Do you take the time and effort to express appreciation of what your customers give you and the things other people do for you?

Is there one among us who can ask himself such questions without resolving to try to correct some things we do and do not do which are revealed to us by this searching mental and moral inventory? We all need a check-up like this to encourage us when we are down and to avoid smugness when we are feeling that things are going fairly well. And especially is it good for salesmen to whom stimulation and inspiration are necessary to sustain effort, and to whom a check-up is needed from time to time to avoid complacency.

Salary or Commission?

One of the most perplexing questions in sales management and development is that of the basis of compensation—straight wages or salary or commissions based upon production. The problem is not an easy one in any field of salesmanship and especially difficult in transportation sales where a service rather than a commodity is sold and where so large a part in successful representation is played by cooperation of the salesmen who solicit the shipper and the consignee at both ends of a prospective movement of goods. Often both of these parties must be sold, despite the fact that, technically, the terms of sale may cause title to the goods to pass at point of origin, which would give the buyer the power to route the shipment, or at destination which would reserve to the shipper the power to select the route.

A commission basis of payment recognizes production and is a spur to effort. But this basis of reward puts undue emphasis upon immediate tangible results which, in the longer run, may not be as productive to the company or to the salesman as a consistent effort with some patrons over a long period of time. Commissions tend to encourage individual production and to discourage cooperation in giving "tips" to others which may result in sales by them and their earning of the commissions. Salesmen's earnings in commissions are apt to vary too greatly from month to month to provide stable living conditions. Straight salaries sometimes lack the incentive necessary to keep salesmen going and fail to reward extraordinary effort and success.

Not as a compromise, but as a better basis than either straight salary or straight commission, it is suggested that salaries might be based upon sales quotas with a sliding scale of bonuses based upon production above the quota set.

Production quotas should, it is suggested, include both the traffic secured and the information given to others of traffic controlled by those in other sales districts. Credit should be given for the "assists" as well as for "put-outs." The objections may be raised that this basis of payment necessitates detailed records

[1] "So You're a Salesman Now!"

and accounting, and that quotas are difficult to fix. There is validity to these objections, but they are a small price to pay for effective sales promotion and stimulation. There seems to be no easy answer to the question of salesmen's compensation, but if the basis is not fair and encouraging, the salesmen are sure to be dissatisfied and their productiveness will be diminshed.

Promotion

Just as difficult as the question of promoting production by compensation, is that of encouraging ability and effectiveness by promotion to greater responsibilities, larger or better territories, or higher rank. It is suggested that adequate sales management includes not only increasing productiveness of salesmen and the increase in traffic but the development of salesmen for greater responsibility in supervisory and executive positions. This involves the discriminating use of examinations to discover the salesmen's capabilities, the careful study of their records, and the examination of their qualifications for higher positions and greater responsibilities.

All salesmen do not seek supervisory or executive positions if their earnings as "star" salesmen give them the rewards or satisfaction they seek. Others aspire to supervisory and executive positions quite apart from the higher income that annually can be earned in these jobs, because they like and have capacity for this type of work. The task, then, is a dual one of finding out which salesmen prefer field work, and which ones seek supervisory work or executive responsibility, and of determining fairly and effectively whether the salesmen's capacities are commensurate with their aspirations. This is no easy job, but one that must be done if transportation solicitation or salesmanship is to be kept in line with salesmanship and sales management in other branches of marketing.

It should be emphasized that this article seeks only to outline some of the problems and not to answer all the difficult questions which arise in connection with this subject, which would require a treatise rather than a brief discussion.

Roadmasters Meet

(*Continued from page 478*)

discussed, as was the cutting of rails with torches, without preheating them properly. Emphasis was placed on the importance of beveling the ends of rails, either at the mill or in the field, to prevent chipping, and of building up battered rail ends before the stage is reached where cracks develop.

Additional causes of rail damage that were discussed, included the striking of the webs of rails with spike mauls, especially during cold weather; improper super-elevation on curves, resulting in excessive flattening of the inner rail or excessive wear on the outer rail; and the burning of holes in rails with gas torches.

Mentioning brine drippings as one of the most serious problems in preventing damage to rail, the committee said that such damage can be retarded by considerable and frequent applications of oil over the entire surface of the rail, except the ball. The excessive use of locomotive sand by enginemen was also mentioned as a source of rail damage. Finally, it was pointed out that as soon as the treads of car or locomotive wheels become worn and develop so-called "false flanges" they begin immediately to take their toll in rail wear.

Maintenance in Yards

The heavy traffic of recent years, along with the shortage of man-power, has intensified the problems encountered in yard maintenance, according to the report on this subject, which was prepared by a committee of which Henry C. Koch, roadmaster, Belt Railway of Chicago, was chairman. Stressing the importance of a high degree of co-operation between the maintenance and the operating forces at yards, the committee held that arrangements for doing work requiring that tracks be taken out of service for a short period should be made by the foreman in collaboration with the local yardmasters, and that, where conflicting opinions threaten delays to the work, the roadmaster should handle the problem with the local trainmaster or superintendent.

Following a discussion of the procedure and methods to be followed in making repairs to lead switches, the committee dealt briefly with the use of power tools in yard work, pointing out that the efficient use of such tools in yards depends on the size of the job. It was noted that cutting and welding outfits, bolting machines, small tamping outfits and cranes for handling heavy materials are found to be economical and that they will shorten the time tracks must be taken out of service. Next, there was a brief discussion of the advantages of protecting switch points with bent or welded housings, or applying the manufactured types of point protectors, and of equipping switches with automatic stands that allow the points to spring over when equipment is run through the switches.

In a discussion of the problems involved when renewing rail out-of-face on long yard tracks, the committee devoted considerable space to the matter of material distribution, pointing out that this may be done faster by work trains than by other means, but that traffic demands and shortages of power and crews had resulted in the elimination of this service to such an extent that other methods are now being used. It was also held that the use of a work train may be more efficient for picking up materials released from long tracks, but that if such a train is not obtainable resort must be had to the use of push cars. The picking up of salvaged material, the making of safe closures where the tracks are required after working hours, and the necessity of applying sufficient anti-creepers to eliminate slewing ties and buckled rail, were other matters discussed.

The committee next dealt with the problems involved in the maintenance of retarders, switches, crossings and tracks at hump yards, emphasizing that such work requires considerable advance planning and close co-operation with the operating department. The same careful planning, it said, is required where the work involves tracks at passenger terminals, engine terminals, coach yards, freight houses, team yards, and other auxiliary yards. Methods to be followed in cleaning yards, in controlling the growth of weeds, and in caring for switches were then discussed.

Next the committee gave considerable attention to the problem of keeping yard facilities functioning properly with reduced forces during winter weather. Here again emphasis was placed on the necessity of adequate advance planning and preparation. The value of snow melters or burners, and snow blowers, in keeping switches open was discussed, as was the use of salt in dealing with sleet and ice along switching leads. Mention was also made of the use of power tools to break up accumulations of ice and dirt. So that the foreman will have a steady gang, with men available for use in snowstorms and other emergencies, the committee recommended that enough work be scheduled to keep the regular yard gang busy during the winter months. The closing paragraphs of this report were devoted largely to a discussion of yard design and construction, principally from the viewpoints of improving operations, lightening the work of the maintenance forces and creating safer conditions.

NEW BOOK . . .

The Train Book, by Jeffrey Victor, pictures by John English. 20 pages. 4¾ in. by 12½ in. Bound in cardboard with ring binder. Published by Madison Square Publishing Company, 2 E. 23rd St., New York 10, N. Y. Price $1.

This is an unusual little book for children, for, since it contains basic information on railroading, and is made in the shape of a locomotive, it is both a book and a toy combined.

It contains more than thirty big, simple pictures in color, portraying the different cars, people who work on the railroad, scenes inside the train, how to go on a train trip, etc. The pictures are done in an amusing style that will appeal to children. Each picture is accompanied by a block of text telling the kind of things that children want to know about trains. The copy is keyed to the age level of young readers and makes railroading really understandable to a child. Railroad people may find this little book helpful in explaining to their children in graphic style "where Daddy works."

GENERAL NEWS

Metzman to Address A. S. Shippers' Board

N. Y. C. president to be chief speaker at group's first post-war session

Gustav Metzman, president of the New York Central, will be the principal speaker at the first post-war meeting of the Atlantic States Shippers Advisory Board at the Biltmore Hotel in New York on October 4. Mr. Metzman will address a luncheon sponsored jointly by the shipper organization and the Traffic Club of New York.

Highlights of the business sessions of the board will include a talk on the national transportation situation by Warren C. Kendall, chairman of the Car Service Division, Association of American Railroads; the presentation of committee reports, and the election of the nominating committee. J. A. Quinlan, president of the board, and vice-president of the St. Regis Paper Company, will preside.

On Wednesday, October 3, two radio programs will be presented by New York City stations in connection with the meeting. One will be broadcast by Station WOR from 1:30 to 1:45 p.m., and the other will be presented by Station WNYC from 6:00 to 6:15 p.m. Those heard over WOR will be Clare J. Goodyear, president of the National Association of Shippers Advisory Boards; Colonel E. C. R. Lasher, second zone transportation officer, Army Transportation Corps, and Mr. Kendall. Participating in the broadcast over WNYC will be R. W. Brown, president of the Reading; John M. Fitzgerald, vice-chairman of the Eastern Railroad Presidents Conference; and Mr. Quinlan. Albert R. Beatty, manager of the Publicity Section of the A. A. R., will conduct both programs.

On October 3, six of the Shipper Board's committees will hold preliminary meetings at the Biltmore.

C. M. Clay Resigns from B. & O., Attacks Its Refinancing

Cassius M. Clay, general solicitor of the Baltimore & Ohio, resigned on September 16, making public a letter to President Roy B. White in which he criticized the company's plan of financial readjustment. Mr. Clay's letter said, in part:

"I have been publicly attacked in connection with a proceeding [i.e., the refinancing] of which I profoundly disapprove, and for which it is assumed I have participating responsibility, although, in fact, my views have been consistently ignored."

In commenting upon Mr. Clay's letter, Mr. White said that Mr. Clay's duties as general solicitor for the B. & O. "did not include any responsibility as to the financial reorganization plan since the company, in accordance with its policy, employed special counsel with the approval of its general counsel."

The "public attack" referred to by Mr. Clay came in a letter from Senator B. K. Wheeler (D., Mont.) in which he criticized Baltimore & Ohio financing operations, the involvement of the Reconstruction Finance Corporation in these actions as a large creditor of the B. & O., and the subsequent employment of a number of R. F. C. people in official positions by the B. & O. (*Railway Age*, August 18, page 310.)

Mr. Clay, by birth a Kentuckian, is 50 years of age. He was graduated from Yale Law School in 1921 and practiced law in New York until 1936. From 1936 to 1941 he was assistant general counsel in charge of the railroad division of the R. F. C. and has been general solicitor of the B. & O. since 1941.

U. P. Trainmaster Commands 743rd Operating Battalion

Maj. Charles E. Breternitz, of North Platte, Neb., a furloughed trainmaster of the Union Pacific, has been appointed commanding officer of the 743rd Railway Operating Battalion, Headquarters, European Theater of Operations, has announced.

Employed by the U. P. since 1927, Major Breternitz was called to active duty October 21, 1944, and was flown at once to the E. T. O. There, prior to his new appointment, he served as a liaison officer for the Military Railway Service throughout France and Belgium.

Brunner Memorial Established to Aid Engineering Education

With funds bequested by the late Mrs. Cora M. Brunner of Evanston, Ill., as a memorial to her husband, John Brunner, the University of Illinois has established the Brunner Memorial Endowment for Research and Advancement in Engineering Education.

Mr. Brunner, who died in 1936, was a noted metallurgist, born and educated in Sweden, who came to this country in 1866, working for various railways, and bridge and steel companies in the East. In 1902 he came to Chicago as head of metallurgy and inspection of the Carnegie-Illinois Steel Corporation. From the time of his arrival in Chicago until his death, Mr. Brunner actively cooperated with the University of Illinois in its research in rails and metals, becoming a member of the University's advisory committee of rail investigation in 1931, and serving until his death. In 1931, he devised the "Brunnerizing" process, a treatment designed to prolong the life of rails by preventing the formation of shatter cracks.

Victory Hasn't Eased Troop Transport Job

Had "very little effect" on the over-all movement, Kendall reports

Over-all troop movement activities of the railroads have thus far been affected "very little" by the end of hostilities in the Pacific, according to the appraisal of military transportation conditions which Chairman Warren C. Kendall of the Car Service Division, Association of American Railroads, featured in the September issue of his monthly report on the "National Transportation Situation." Mr. Kendall noted that some of the domestic moves of the Army have been canceled, but indicated that relief in that connection has been pretty well offset by the continued flow of troops to West coast overseas replacement depots and the considerable increase in East coast arrivals under the demobilization program.

The latter, the C. S. D. chairman said, has placed a "particularly heavy burden" on carriers serving these staging areas, "due to diversion to the East coast of ships which were moving direct to the Southwest Pacific from the European and Mediterranean theatres." Thus he pointed out that the number of Army and Navy personnel handled in organized movements in August exceeded a million men. Meanwhile, the demobilization of the Navy has started "on a small scale through East coast intake stations, but will not reach any appreciable volume until about September 15."

Big Diversion Job—With respect to the transportation of military freight, Mr. Kendall reviewed briefly the holding-and-diverting job done on cars loaded with combat materials which were en route to the ports when V-J Day approached. This placed an "unusual load" on the Freight Branch of C. S. D.'s Military Transportation Section, for the carriers were called upon to stop approximately 12,000 cars. Yet disposition instructions were obtained and put through promptly on "practically all of these cars," although some such instructions were delayed because railroads furnished incorrect release numbers, "many of them confusing the bill of lading number with the QMR release." The latter was needed by the armed services to identify shipments.

Turning to civilian travel conditions, Mr. Kendall noted how the Office of Defense Transportation has been rescinding and modifying its orders affecting travel, leaving the railroads and the traveling public greater leeway in these matters. His summary of carloading statistics reported "for the record" that there were 45,052 more cars

of grain and grain products shipped in August than in the same month last year. This was achieved despite the V-J holidays which distorted the total August loadings in such a way as to make comparisons with August, 1944, "not of particular value."

B. O.'s Rise—August 1 reports on the condition of equipment showed 67,536 freight cars, or 3.9 per cent of all cars, awaiting repairs. The bad-order percentage on August 1, 1944, was 3.1 per cent. There were 2,991 cars installed in service during July, and the August 1 total of serviceable cars exceeded the July 1 total by 606.

Coming to his usual review of the equipment situation by types of cars, Mr. Kendall reported that the supply of coal cars at mines "continues tight," for there has been no relaxation in the Solid Fuels Administration's requirements for peak coal production. Revenue coal loadings from August 20 through September 1 "were the highest two weeks during the year 1945, to date." Moreover it will require about 45,000 carloads of coal per month (and this "emphasizes the urgency for coal cars") to carry out government plans for exporting 2½ million tons of coal monthly through Atlantic and Gulf ports to Europe. "To insure a satisfactory coal car supply at the mines," Mr. Kendall warned, "the continued cooperation of receivers, shippers and carriers in most expeditious loading, unloading and moving the loads and empties will be required."

With the cessation of hostilities in the Pacific there was a "material reduction" in requirements for gondolas and a substantial reduction in their loading to the Pacific coast; while the demand for all types of flat cars "fell off abruptly." Hence the supply of gondolas is now "fully capable of absorbing a considerable increase in traffic without difficulty," while the supply of flats, both plain and heavy, "is fully ample in all sections."

Covered Hoppers Scarce—The supply of covered hoppers, however, is not yet sufficient to "fully protect all requirements," the "few" units released through the cancellation of war contracts having been "promptly absorbed" by other projects. "The prompt movement and release of covered hoppers will contribute materially in getting maximum efficiency from the available supply," Mr. Kendall said.

With respect to box cars, there was been a general "slackening in the requirements." Except in the Northwest, where the grain harvest is approaching its peak, "all obligations for this type of equipment are being met currently." Surplus box cars in Eastern, Southern, and Southwestern territories are being moved to the principal grain loading roads in the Northwest. And while Mr. Kendall conceded that the supply "has not been fully adequate" to meet requirements at country loading stations, he pointed out that receipts at terminal markets "have equaled or exceeded the ability of these markets to release cars currently."

The supply of automobile box cars is "fully adequate," although the demand for device-equipped cars "will increase substantially as production of commercial and passenger vehicles gets under way," the C. S. D. chairman next reported. In this connection he also called attention to the "intensive

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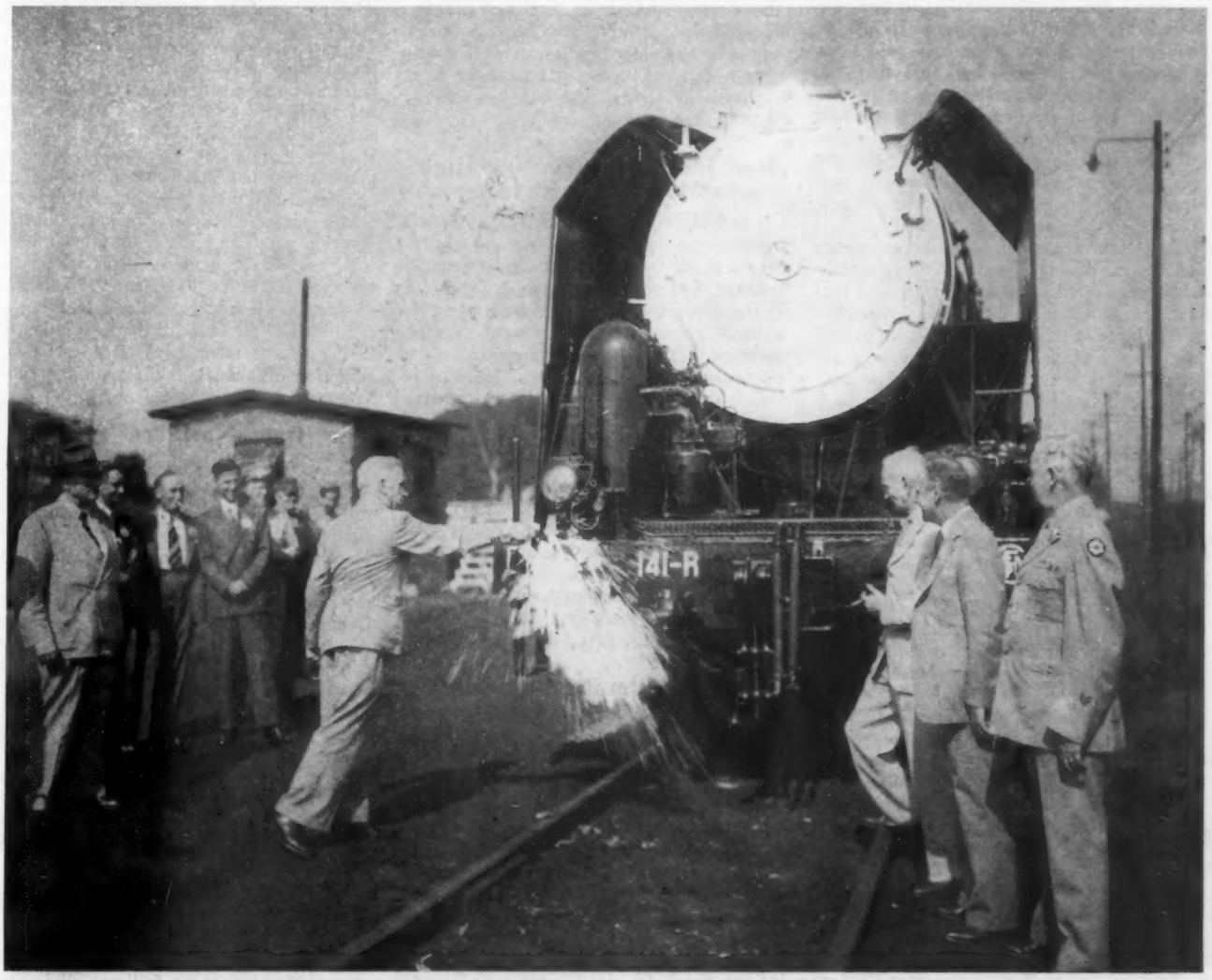


Christening the First of 260 Baldwin 2-8-2 Locomotives Destined for France

Robert LeGuille, chief of the French Railway Mission in Washington, performs the traditional rite at Baldwin's Eddystone (Pa.) plant as (right) Brig. Gen. C. D. Young, Ralph Kelly, president of Baldwin, and Brig. Gen. B. O. Lewis look on. Purchased from three builders by the French government, 700 such U. S. locomotives will aid in the rehabilitation of the French railway system

program" which the railroads have under way for the reconditioning of 40- and 50-ft. auto boxcars "as rapidly as materials are available."

The demand for both single- and double-deck stock cars was reported to be "active in all parts of the country, particularly in the Western territory where the late summer and fall range movement has started." All available stock cars are being directed to the principal livestock loading roads and this type of equipment "has been entirely removed from general service and is being applied exclusively to livestock loading."

Tank Car Surplus—Meanwhile, as Mr. Kendall put it, tank cars "are rapidly assuming their prewar status with surplus cars stored at various points throughout the country." The supply is now adequate to take care of current and anticipated requirements." Petroleum shipments in tank cars to Atlantic seaboard territory, which averaged 300,000 barrels per day during August, "are expected to drop to 50,000 barrels per day or less during September." After noting the elimination of O. D. T. controls over tank cars, and the cancellation of the Interstate Commerce Commission's service order prescribing penalty demurrage charges, Mr. Kendall indicated that the demurrage tariff would be amended "to eliminate the provision which provides for charges, Mr. Kendall indicated that the cars when held for unloading on private tracks." He also called attention to the fact that Car Service Rule 13 was restored to its prewar form on September 1, thereby placing responsibility with owners and lessors for disposition instructions on tank cars after their release at destination.

Mr. Kendall's several specific comments on the continuing demand for refrigerator cars were summed up in his statement that such cars "will be in increasing demand for the balance of this year and in order to protect this loading it will be necessary for these cars to be released and moved promptly. Unnecessary delays for prospective loading must be avoided."

Mexico Returning Cars—With respect to export freight, Mr. Kendall reported that the situation at the ports continues "very satisfactory," while his appraisal of the l.c.l. situation found freight house operations throughout the country on "a current basis other than occasional situations which may arise due to labor conditions or other local causes." The Mexican interchange situation is now such that the return of U. S. owned cars from that country "is proceeding satisfactorily."

August detention reports indicated that the percentage of cars detained by shippers beyond the 48 hours free time was the highest since March, 1944—17.74 per cent as compared with 14.58 per cent for July and 16.67 per cent for August, 1944. The relatively poor August showing was attributed by Mr. Kendall to the "delays and confusion" which occurred as a result of the V-J holidays.

R. & L. H. S. Bulletin No. 66

The Cumberland & Pennsylvania and the Monterey & Salinas Valley, California's first operating narrow-gage line, are among the railroads featured in Bulletin No. 66 of the Railway & Locomotive Historical Society, Inc., Boston, Mass. The Cumberland & Pennsylvania history is well-illustrated and includes a roster of the road's locomotives. The Monterey & Salinas Valley history, in addition to numerous illustrations, includes an old time table and circulars describing the railroad and the surrounding territory. Other articles in this issue cover the Illinois Central suburban service during steam operation; the ten-wheeler on the Maine Central; and corrections and additions to the article on the numbering on the "Pennsy" which appeared in Bulletin No. 65.

Railroaders Saluted in "This Is Your F. B. I." Broadcast

Railroad management and all personnel were honored for their transportation "miracles" in war-time by the Equitable Life Assurance Society of the United States, on its radio program, "This Is Your F. B. I.," over the American Broadcasting network, at 8:30 p. m., September 21.

In announcing his firm's tribute to the railroad industry, Thomas I. Parkinson, president of Equitable, pointed to the reduction in rolling stock and the heavy increase in all movement, and observed that "the accomplishment of the railroad industry is indeed proof that the American system of free enterprise, under which such great feats were accomplished in war-time, is capable of even greater achievements in the post-war years ahead."

New Haven Reports New High in Movement of Troops

The New York, New Haven & Hartford continues to urge civilian passengers "to bear with us" until "normal service" can be restored, and points to its top day thus far in the movement of troops, September 15, when 36 special troop trains were required to move 23,653 men returning from the European theater of operations. In addition, the railroad reveals, 17 extra cars were required for organized troop movements on regular trains, carrying 1,065 men. The figures, it is explained, do not take into account the thousands of uniformed men traveling under their own arrangements.

The New Haven further reports that during the first 14 days of this month, 137,311 service men in troop movements were handled, as compared with 103,227 for the same period in August, 108,864 in July, and 94,272 for the first 14 days in June.

Dual Minimum Rates Considered

The Traffic Executives Association of the eastern railways held a hearing in Chicago last week to give shippers an opportunity to testify as to the proposal to reduce carload freight rates 10 per cent on 14 commodities when cars are loaded to new higher minimum weights. The commodities and the proposed new minima are as follows: butter, 50,000 lb.; cheese, 50,000 lb.; canned milk, 70,000 lb.; canned goods, 72,000 lb.; canned meats, 70,000 lb.; cured meats, 70,000 lb.; green salted cattle hides, 70,000 lb.; soap and washing compounds, 70,000 lb.; manufactured iron and steel, 100,000 lb.; alcoholic liquors, 80,000 lb.; cigarettes, 70,000 lb.; peanuts, 50,000 lb.; printing paper, 70,000 lb.; wrapping paper, and related articles, 70,000 lb.; building paper and prepared roofing, 70,000 lb.

A wide divergence of opinion, ranging from unqualified approval to unqualified objections, was evident in the testimony of the industrial traffic managers who participated in the hearing. The principal objections were that it was a physical impossibility to load certain of these commodities to the proposed minimum weights; that the new rates would discriminate against small producers; that the rate reduction was insufficient to cover the additional expenditures of shippers to load cars up to the proposed higher minima; and that present sales practices would be greatly disturbed by the new rates.

E. H. Burgess, chairman of the Association, emphasized that the proposals were by no means rigid and iron clad and that the hearing was intended to give the shippers an opportunity of expressing any objections and their testimony would be used in further procedure by railway traffic officers in establishing the new rates.

A. R. E. A. Plans Annual Meeting March 12-14, 1946

With the lifting of the ban on conventions by the Office of Defense Transportation, effective October 1, the American Railway Engineering Association is making tentative plans to resume its war-time-deferred anual meetings, looking to a meeting to be held at the Palmer House, Chicago, on March 12-14, 1946. The National Railway Appliances Association, which in peace times has conducted an exhibit of equipment and other products of interest to engineering and maintenance officers in conjunction with the A. R. E. A. annual meetings, has, as yet, made no plans for an exhibit in March, but President W. J. Hanna of this association has called a meeting of the board of directors of the association, in Chicago on October 5, to consider the resumption of annual exhibits on the same basis as in the past.

Great Northern Tests Radio Phone

The Great Northern has been making tests of radio telephone train communication equipment on a 30-mile section of the Mesabi iron range in northern Minnesota. The equipment was installed on five locomotives and in stations at Kelly Lake, Calumet and Gunn. Additional tests soon will be made of engine-to-caboose communication on Great Northern ore trains operated between Kelly Lake, Minn., and the yards at Allouez, Wis. Radio telephone equipment between the yard office and the engine crews has been in service in this yard since 1943. When tests on the iron range are completed it is planned to extend the experiments to freight train service on the main line between St. Paul, Minn., and Seattle, Wash.

New Haven Enthusiastic About Food-Handlers' School

The New York, New Haven & Hartford reports that 809 of its grill car, dining car and restaurant employees, together with all dining car service supervisors, have completed the "Railroad Food Sanitation" courses sponsored at the Harlem Health

Center, in New York, by the U. S. Public Health Service, in cooperation with nine eastern railroads. The railroad further reports a 100 per cent attendance. The courses (as noticed in the *Railway Age* of August 11), dealt chiefly with sanitary practices on dining cars and in commissaries, personal hygiene and health, and proper care and storage of food to minimize the spread of germs.

So enthusiastic is the New Haven's dining car department about the Food Sanitation Training School that it has asked the U. S. Public Health Service for a two-day repetition of the course every six months for the benefit of new employees.

Freight Car Loading

Loadings of revenue freight for the week ended September 15 totaled 856,105 cars, the Association of American Railroads announced on September 20. This was an increase of 125,477 cars or 17.2 per cent above the preceding week, which included the Labor Day holiday, a decrease of 35,381 cars or 4.0 per cent below the corresponding week last year, and a decrease of 46,661 cars or 5.2 per cent below the comparable 1943 week.

Loading of revenue freight for the week ended September 8 totaled 730,628 cars, and the summary for that week, as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loading

For the Week Ended Saturday, September 8

District	1945	1944	1943
Eastern	128,740	145,882	154,016
Allegheny	155,554	180,182	183,892
Pocahontas	45,891	54,644	55,570
Southern	101,263	113,375	115,091
Northwestern	125,030	134,717	135,672
Central Western	120,281	128,066	121,937
Southwestern	53,869	68,300	68,492
Total Western Districts	299,180	331,083	326,101
Total All Roads	730,628	825,166	834,670
Commodities			
Grain and grain products	51,601	43,621	47,768
Live stock	16,851	17,953	16,501
Coal	144,721	158,531	170,100
Coke	10,996	13,359	14,473
Forest products	36,758	42,096	41,787
Ore	70,471	75,318	83,338
Merchandise l.c.l.	92,979	100,077	93,242
Miscellaneous	306,251	374,211	367,461
September 8	730,628	825,166	834,670
September 1	860,439	897,603	901,075
August 25	853,426	904,871	904,057
August 18	652,832	886,623	891,340
August 11	870,007	895,181	887,164
Cumulative Total, 36 Weeks	29,471,453	30,044,069	29,077,144

In Canada.—Carloadings for the week ended September 8 totaled 66,019 as compared with 75,994 for the previous week, and 66,056 for the corresponding period last year, according to the compilation of the Dominion Bureau of Statistics.

Totals for Canada:	Total Cars Loaded	Total Cars Rec'd from Connections
September 8, 1945	66,019	30,341
September 9, 1944	66,056	35,745
Cumulative Totals in Canada:		
September 8, 1945	2,469,347	1,294,422
September 9, 1944	2,500,794	1,382,762

August Operating Revenues 11.1 Per Cent Under 1944

From preliminary reports of Class I roads representing 80.2 per cent of total operating revenues, the Association of American Railroads has estimated that the August gross totaled $596,078,843, a decrease of 11.1 per cent below the $670,251,173 reported for August, 1944. Estimated August freight revenues were $428,353,393, compared with $492,090,895, a decrease of 13.0 per cent. Estimated passenger revenues were $122,776,838, compared with $130,861,595, a decrease of 6.2 per cent.

Equipment on Order

Class I railroads on September 1 had 38,249 freight cars on order as compared with September 1, 1944, orders for 36,157, according to the Association of American Railroads. This year's September 1 total included 17,612 plain box cars, 2,608 automobile box cars, 12,075 hoppers, 4,077 gondolas, 973 flats, 854 refrigerator cars, and 50 of miscellaneous types.

Locomotives on order September 1 totaled 512, including 107 steam and 405 Diesel-electrics, as compared with a September 1, 1944, total of 554, including 150 steam, two electrics and 402 Diesel-electrics.

The Class I roads during this year's first eight months placed 27,740 freight cars in service as compared with 22,312 put in service in 1944's first eight months. The former figure included 11,767 plain box cars, 1,419 automobile box cars, 7,539 hoppers, 4,559 gondolas, 389 flats, 1,741 refrigerator cars, 239 stock cars, and 87 of miscellaneous types.

Locomotives installed in this year's first eight months totaled 408, including 59 steam and 349 Diesel-electrics, as compared with 657, including 241 steam, one electric, and 415 Diesel-electrics, installed during the first two-thirds of last year.

Reveal Five-Year Expenditures of Two British Railways

During the five years 1940-44, the London & North Eastern's wartime expenditures for track and equipment totaled nearly $420,000,000, while that of the Southern Railway amounted to more than $156,060,000, it has been reported by T. D. Slattery, general traffic manager of the British & Irish Railways, in New York.

Largest of the L. & N. E.'s expenses—$166,230,000—went for the renewal of 1,400 miles of track, requiring 220,714 tons of rails and 4,435,189 railway ties. It is reported $130,000,000 was spent for the building of 185 locomotives in addition to more than 22,000 repairs, and $38,000,000 for passenger cars. Although only 518 of the latter cars were built, more than 167,000 repairs were made. Including repairs to old cars, $85,455,000 represented the railroad's expenditure for building 30,000 freight cars.

On the Southern, the largest expenditure—$86,985,000—went for equipment and repair of tracks. The railroad built 53 new locomotives including one electric, as well as 130 locomotives for other railways. Total cost of this undertaking, including repairs to 4,500 others, amounted to nearly $37 million. Construction of 359 passenger cars, and repairs to 61,636 others, cost another $16,775,000. Another $15 million went for the construction of 6,000 freight cars and the repair of 313,400.

Railroad Annual Reports Given Recognition in Survey

The Chesapeake & Ohio for the second straight year has won the "Best of the Industry" award for railroads in the fifth annual stockholder report survey sponsored by the magazine "Financial World." Second in the railroad classification was the annual statement of the Baltimore & Ohio. Both railroads will receive their winning bronze and gold trophies at a dinner to be held at the Waldorf-Astoria Hotel, in New York, October 2.

The statements, covering 50 industry classifications, were chosen on the basis of financial, statistical and editorial content (60 per cent) and for format, typography and illustration (40 per cent). Judges included C. Norman Stabler, financial editor of the "New York Herald-Tribune"; Sylvia Porter, financial editor of the "New York Post"; Norman Bel Geddes, industrial designer; Glenn Griswold, editor of "Public Relations News" and "Planning"; and Dr. Lewis Haney, professor of economics at New York University.

N. E. Shippers Board Announces September 28 Program

National as well as New England transportation conditions will be forecast when the New England Shippers Advisory Board meets in all-day session, September 28, at Hotel Statler, Boston.

Guest speaker at the noon luncheon gathering will be William K. Jackson, vice-president and general counsel of the United Fruit Company, and president of the Boston Chamber of Commerce. His topic will be "New England's Industrial Future."

W. C. Kendall, chairman of the Car Service Division, Association of American Railroads, and L. M. Ross, district car manager of the division, will discuss national and New England transportation prospects for the coming months. A forecast of New England business conditions for the final quarter of the year, and a digest of commodity reports will be presented by F. J. Gill, of Portland, Me., general secretary of the Advisory Board.

There will be the usual reports of the contact committee, loss and damage prevention, l. c. l. transportation committee, legislative and the car efficiency group.

Club Meeting

The Car Foremen's Association of Omaha, Council Bluffs and South Omaha Interchange will meet in the Chicago Great Western's freight house, at Council Bluffs, Ia., October 11.

Donald Conn to Address New York Traffic Club

"The Last Stand for Private Enterprise" is to be discussed by Donald D. Conn, of Chicago, executive vice-president, Transportation Association of America, at the September 25 meeting of the Traffic Club of New York. The session is to be held at 8 p. m., at the Hotel Biltmore.

There will also be an election of the nominating committee for the ensuing year.

C. P. R. Diners.—The Canadian Pacific reports that in the period from September, 1939, to V-J Day, more than 16,000,000 meals were served on its train alone. Figures for the heaviest month of "repatriation specials" show that 462,900 meals were served in C. P. R. diners during July of this year, as compared with 157,932 for July, 1939.

With the Government Agencies

Pacific War Ports' Record Is Revealed

Army moved 44 million tons of cargo and 2½ million men west in 45 months

The first detailed report of the performance of the various Pacific coast ports in the movement of troops and supplies to the Pacific theater has been released by the War Department, covering the 45-month period from December, 1941, through August, 1945, and accounting for the transfer overseas of nearly 2½ million men and of more than 44 million ship tons of cargo.

The bulk of the outgoing movement, both of men and materiel, was handled through the San Francisco Port of Embarkation, where 1,655,000 troops and 22,751,000 ship tons of cargo were dispatched. The second port in importance in this service was the Seattle Port of Embarkation, which handled 524,000 men and 10,219,000 ship tons of freight. Sub-ports, administered so far as the Army organization is concerned through Seattle, were Portland, which handled 53,000 troops and 1,731,000 ship tons of cargo, and Prince Rupert, B. C., where 31,000 men and 940,000 ship tons of supplies were loaded.

Prince Rupert to Alaska—Prince Rupert was relied on particularly as a route to Alaska, it being possible to move about 50 per cent more men and materials with the same number of ships from that port to Alaska as compared with Seattle, due to the shorter water mileage involved. Dockage, storage and handling space at Prince Rupert were substantially enlarged by the Army to facilitate use of the port for the supply of the Alaskan theater and the Aleutian islands.

The other important West coast port, so far as Army operations were concerned, was the Los Angeles Port of Embarkation, which handled 188,000 men and 8,645,000 ships tons of cargo during the period of hostilities. The growing magnitude of the operation against Japan is indicated by figures by years for the dispatch of men and cargo through all the Pacific ports operated by the Transportation Corps, In 1942 the totals were 368,000 men and 5,764,000 ship tons; in 1943, 566,000 men and 10,076,000 ship tons; in 1944, 780,000 men and 14,555,000 ship tons; and in the first 8 months of 1945, about 700,000 troops and 13,737,000 ship tons of supplies.

Performance by Ports—Individual port records for the Atlantic coast and Gulf of Mexico have been made public previously, insofar as the war in Europe was concerned. The complete figures were revealed in the latest review of port operations, as shown in the accompanying table.

These ports and other facilities are now being taxed to handle the return of men

Troops and Army Cargo Shipped Overseas

(December, 1941, through August, 1945)

Port	Troops	Cargo Ship Tons
Atlantic coast ports	4,687,850	75,334,000
Boston	741,000	9,399,000
New York	3,184,000	37,800,000
Philadelphia	500	5,893,000
Baltimore	1,350	6,504,000
Hampton Roads	725,000	12,522,000
Charleston	36,000	3,216,000
Gulf coast ports	167,000	7,239,000
Pacific coast ports*	2,451,000	44,286,000
Total for all ports ...	7,306,000	126,859,000

* Figures for individual Pacific coast ports appear in the text above.

from overseas, from both the European and Pacific theaters, according to War Department statements which picture a rapidly changing and steadily accelerating demobilization program. While Major General Charles P. Gross, chief of transportation, put the expected peak load at "more than 500,000 men returning per month" at the end of the year, according to a September 10 statement, the figure was raised to "more than 600,000 a month by December" in a War Department announcement made public three days later. The later figure was based, it was indicated, on plans for establishment of 155 temporary separation points and bases for the discharge of men who are now in the United States, while the Transportation Corps estimate dealt particularly with the return of men from overseas and discharged through the permanent separation centers. Under the accelerated program, it is expected that by Christmas 2,000,000 men will have been discharged from the Army since V-E Day.

Five-Mile Line Is "Surplus"

The Reconstruction Finance Corporation, designated by the Surplus Property Board as the disposal agency for surplus producers' and capital goods, is offering for sale a line of railroad approximately five miles in length in Calcasieu parish, La., together with certain interchange, spur and side tracks, which connects with the Kansas City Southern at a point near West Lake. One of the conditions precedent to sale of the line is that the purchaser must agree to furnish common carrier service at rates generally the same as those presently in effect by common carriers serving Lake Charles.

I. C. C. Staff Appointment

Colonel Herbert Qualls, returned from military service, has assumed his former duties as assistant director of the Bureau of Motor Carriers, Interstate Commerce Commission. He is in charge of the bureau's field staff.

Would Keep I. C. C.'s Independent Status

Congress is asked to exempt it from Truman's program to streamline government

The Interstate Commerce Commission has noted with the "deepest concern" that it is not exempted from the plan to reorganize the executive departments of the federal government which has been advocated by President Truman and formulated in a bill (S. 1120) by Senator McCarran, Democrat of Nevada, the chairman of the committee on the judiciary. This view of the commission has been expressed in a letter from Chairman John L. Rogers to the senator, whose committee recently has been holding hearings on the proposal.

As noted in *Railway Age* of June 16, page 1074, the McCarran bill would give the President practically unrestricted authority to transfer commissions, agencies and bureaus of the government, whether or not they are now independent entities, to the control of any other department or establishment, subject to veto by Congress. The only agency over which such power could not be exercised, under this bill, is the General Accounting Office.

Independent 56 Years—The Interstate Commerce Commission, its chairman pointed out, was set apart 56 years ago "as an agency independent of executive control or interference," in order to "carry on legislative functions under rules and principles laid down by Congress." While its orders are subject to review by the courts, and the executive departments of the government are available to it for enforcement of such orders, the commission has functioned ever since it was set up as "an arm of Congress," the chairman said.

"The most important duty of the executive branch under the Interstate Commerce Act, as amended, is the appointment of the commissioners by the President with the advice and consent of the Seanate," the letter continued. "These appointments are very carefully hedged about with the view of keeping the commission independent from political influence or interference. . . 'Independence' as applied to the Interstate Commerce Commission has meant through all the years independence of political influence, coercion or meddling in the exercise of its functions. . . ." This "independent" status, however, said Mr. Rogers, does not mean that the commission is without any controls whatsoever and free to act arbitrarily; subject to judicial review of its actions and to the President's appointive power, it is "a servant of the Congress," its agent for the regulation of commerce. The commission's

(*Continued on page 501*)

Truckers Try Again for L. C. L. Increase

Ask I. C. C. to order a uniform rail-truck classification, prescribe rate limits

The American Trucking Associations and other motor carrier interests which are parties to the proceedings in the Interstate Commerce Commission's uniform railroad class rate and classification proceedings, Nos. 28300 and 28310, have appealed to the commission "in desperation" for a rehearing and further consideration of its findings with respect to the permanent class rate adjustments which the rail carriers are required to put into effect upon completion of a uniform nation-wide rail freight classification. The truckers previously have asked the commission to modify the provisions of its order affecting l.c.l. rates, but without success.

"Unlawful" Say Truckers—Making no attack upon the interim class rate adjustments which the commission has directed the railroads to put into effect November 30 with the object of bringing about greater uniformity in such rates in the area east of the Rocky mountains pending compliance with other phases of the order, the truckers assert that the order, at least insofar as merchandise traffic is concerned, is "unreasonable, unjust and unlawful," and petition the commission to reopen the proceedings at least to the extent that merchandise traffic is affected by its requirements.

The truckers further ask the commission to consolidate the rail class rate case, if reopened, with the MC-C 150 and MC-C 200 proceedings, and to broaden the scope of the consolidated investigation to include exceptions to class ratings as well as the class rates and classifications of both rail and motor carriers. After full hearings in such broadened and consolidated proceedings, the petition goes on to say, the commission should expressly lay down principles to govern freight classification by both rail and motor carriers and require them to maintain a nation-wide uniform classification applicable alike to both forms of transportation. Based on such a classification, moreover, it adds, the commission should prescribe reasonable maximum and minimum class rates for both types of transportation.

Safeguarding Commodity Rates—The railroads subject to the commission's order in No. 28300 requiring interim class rate adjustments have petitioned for authorization to include in such adjustments provisions to prevent the application of the modified class rates where a commodity rate, exception or column rating is already effective. The purpose of this provision, it was indicated, is to prevent the application of the modified class rates via circuitous routes for the purpose of breaking down the commodity rate structure.

The western railroads have asked the commission to modify the requirements of its order with respect to the interim adjustments to exclude class rates between and within Southwestern and Western Trunk Line territories where such rates now are lower than those prescribed under the commission's order. These lower rates, generally speaking, have been established, it was indicated, to meet truck competition or to comply with state commission orders.

Other Petitions—In another petition, the carriers in Official and Western Trunk Line territory have asked the commission to modify and clarify its order in No. 28300 with respect to class rates between so-called extended zone C in Wisconsin and Official territory, including Illinois freight territory, in order to maintain existing relative relationships and avoid further reduction of already "sub-normal" rates.

Through B. T. Jones, agent, the railroads which are required to effect interim adjustments in class rates under the commission's order have asked it for special permission, effective for the life of the interim provisions, relieving them from full compliance with tariff publication requirements in establishing the prescribed modifications. With such permission, the carriers indicated they plan to publish and file class rate tables containing the revised class rates to apply only in connection with ratings in the existing classifications, to amend existing class rate tables to make them applicable only in connection with exceptions ratings, to publish supplements containing additional rate bases sections and rate tables to apply in connection with ratings in the existing classifications, to publish class rate tables to supersede tables now published, and to publish within Western Trunk Line territory by reducing first class rates 10 per cent and issuing a new minimum class rate tariff to be employed along with existing tariffs as maxima.

I. C. C. Service Orders

The Interstate Commerce Commission has set aside its Service Orders Nos. 97, 183, 243, and 312, the vacating orders being effective September 22 for No. 97 and September 18 for the others. No. 97 authorized the Missouri Pacific to operate from Georgetown, La., to Tioga over the line of the Louisiana & Arkansas. No. 183 reduced to 7 days the allowable free time on cars held at North Atlantic or Pacific coast ports for transshipment by water, while No. 312 made a similar restriction effective at Gulf ports. No. 243 limited lightweighting of tank cars to once per loaded trip, except for stenciling weight on cars.

Following modification of icing restrictions on shipments of vegetables from the West which were effected by the second revised versions of Service Orders Nos. 345 and 346, reported in *Railway Age* of September 15, page 457, the commission has issued general permits under these orders further relaxing these restrictions. These changes result in removal of the 8,000 lb. restriction on icing of potatoes and the prohibition of destination bunker icing of potatoes, provided the car has not already been iced to the extent otherwise permitted. The prohibition of bunker icing of top-iced cars of vegetables has been modified as to certain commodities originating at specified points, and the 8,000-lb. limit on retop icing of vegetables has been removed.

W. S. A. Given I. C. C. Operating Authority

Order limited to December 31; ship companies to get fees as agents

The Interstate Commerce Commission has granted the War Shipping Administration temporary authority, expiring December 31, for operation as a common or contract carrier by water in coastwise and intercoastal service between points on the Atlantic, Gulf of Mexico, and Pacific coasts, such operation to be performed by holders of certificates or permits for the performance of the service involved, not now engaged in operation due to war-caused conditions beyond their control, who are to act as agents of the W. S. A.

The report and order of the commission was in the No. W-926 Sub 1 TA proceeding, in the disposition of which Commissioners Miller, Patterson and Johnson did not participate. The W. S. A. application was opposed by the Association of American Railroads (in this instance not representing the Central of Georgia), and the commission heard oral argument on the issues on September 13. The W. S. A. application was supported by various port and commercial organizations.

Railroads' Objections—As noted in *Railway Age* of September 8, page 419, the A. A. R. based its opposition to the requested authorization on the grounds that the commission lacked jurisdiction to grant such broad general authority under the provisions of section 311 of the Interstate Commerce Act, as the W. S. A. asked; that the W. S. A. is not legally authorized to engage in the operation proposed; that such operation would constitute unfair competition with the railroads; and that the applicant has not shown an immediate and urgent need for the service. These points were stressed in oral argument by T. L. Preston, A. A. R. assistant general counsel.

The application was filed, the W. S. A. indicated, as the most practical means of restoring the service of domestic steamship operators which had been interrupted by the war, and which the individual operators could not resume promptly because many of their pre-war vessels had been lost or were located in foreign waters or otherwise not available. The W. S. A., on the other hand, has vessels available, the final disposition of which is the subject of pending legislation. In order to restore coastwise and intercoastal service as early as possible, a procedure which the W. S. A. contended is in the public interest, its plan is to have the holders of operating certificates covering the various pre-war services operate its vessels as agents, with the same rates, generally, as prevailed before the outbreak of hostilities, and the same operating practices. The operation would be a government venture from the profit and loss standpoint, as explained by William Radner, W. S. A. general counsel, as the individual operators would perform their services on a fee basis and all revenues would go to the government, but it would be a private venture, as he viewed it, in all other respects.

Against Government Operation—The "last thing" the W. S. A. wants, its counsel said, is government operation of the domestic steamship lines. The temporary authority sought is regarded by that agency as the least of various evils, and the decision to undertake the operation was made, he said, "reluctantly." Vessels will be assigned to the various operating companies under a general agency agreement, to be managed as if owned by these companies. The operators will disburse and collect all moneys, issue bills of lading, and otherwise perform the duties of carriers, and will maintain a "revolving fund" to support their activities, remitting net balances to the government.

In addition to being reimbursed for expenses incurred and paid a management fee ($75 per ship per day) and an additional amount based on tons of cargo handled, operators may receive participation in profits, it was explained to the commission. Mr. Radner went on to say that the W. S. A. has assured the Office of Defense Transportation, which has supported its application, that it will not undertake any operation unless it is convinced there is a "reasonable opportunity" for its financial success.

Discussing in turn the arguments advanced by the A. A. R., the commission reached the conclusion that it had jurisdiction in the case, that its operating authorization might be broad in scope, so long as it was between specified territories, and that, under the provisions of the National Transportation Policy as stated in the Transportation Act of 1940, it may consider the economic needs of commerce and industry for a particular type of transportation service, notwithstanding the availability of some other type of transportation.

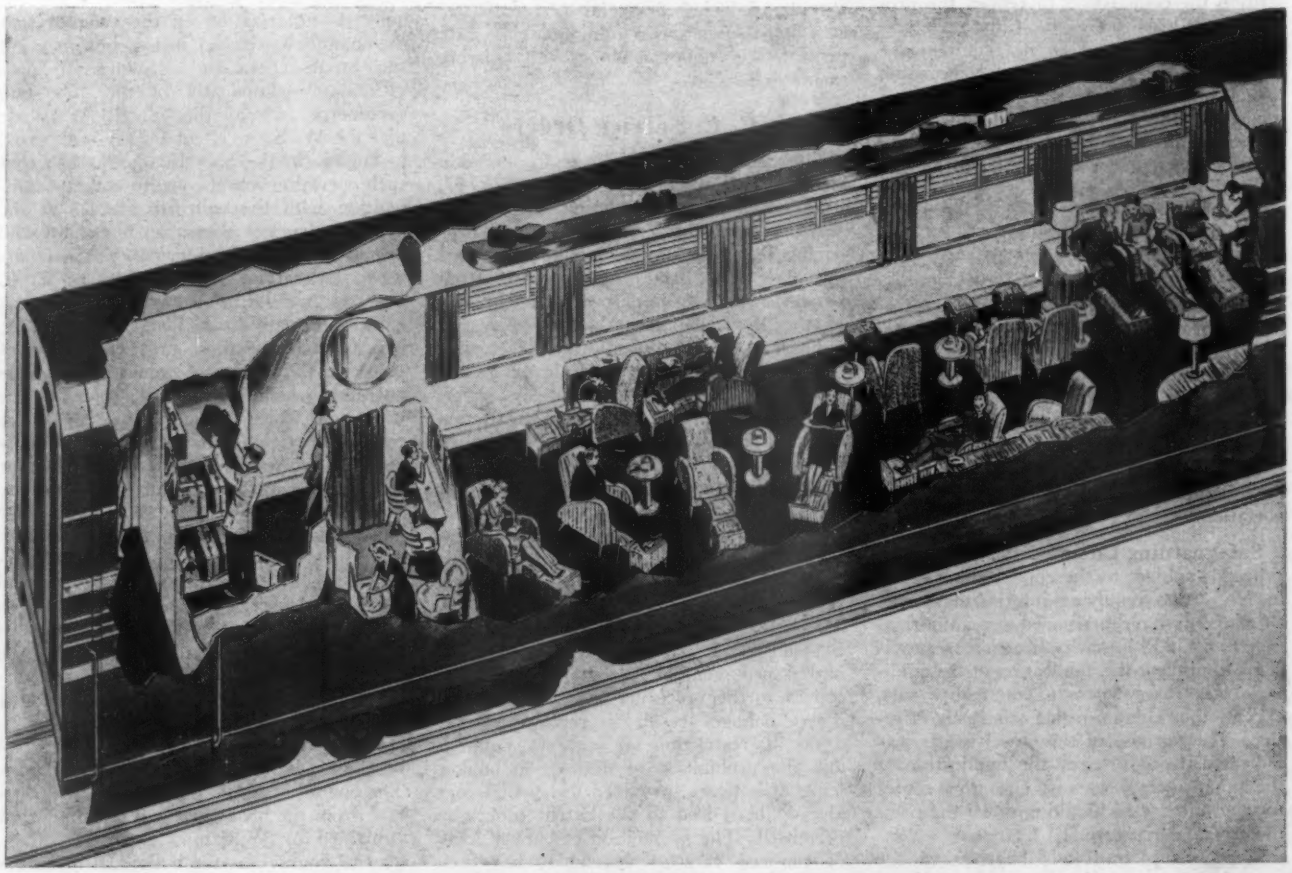
Whether or not the W. S. A. has authority under the Executive Order creating it to operate vessels in coastwise or intercoastal service is not a question within the commission's jurisdiction, its report went on to say. The A. A. R. contention that the agency has no such authority because the order creating it excludes vessels in such service under O. D. T. control was termed "untenable" by the W. S. A. counsel, who told the commission that the agency has been engaged in the coastwise and intercoastal trade since 1942, with the approval of the O. D. T. and the full knowledge of Congress, without its authority to do so being questioned.

Rates Not Involved—The railroads' "apprehension" that the W. S. A. plan would constitute unfair (and in effect subsidized) competition is based, the commission's report said, on the understanding that operations would be conducted with previously existing rates "and the assumption or belief that those rates are so low as to be noncompensatory." The matter of rates is not an issue in the proceeding, the commission held, and the existing tariffs must be observed unless and until they are changed as provided by law. "We may not assume," the commission said, "that applicant will perform service at noncompensatory rates and it asserts, on the contrary, that it intends to charge rates which will be compensatory."

On the question of need, the commission found that "coastwise and intercoastal shipping normally is an integral part of the national transportation system. The tonnage moved in this service before the war was substantial. . . . The cessation of the war makes it immediately necessary to resume the normal services of the companies which were suspended by reason of the war. Consequently, there is persuasive force to the applicant's contention with respect to the water carrier services under consideration. The vessels which the operating companies lost cannot be immediately replaced by purchase or by constructing other vessels. Under such an arrangement with the applicant as would here be implemented these companies measurably can meet the instant emergency pending the reacquisition of adequate equipment. We find that there is an immediate and urgent need for the service proposed, and that there is no carrier service between the points involved which is capable of meeting such need."

In a concurring opinion, Commissioner

* * *



The New "Living Room" Car Designed by the Pullman-Standard Car Mfg. Co.

A successor to the present-day parlor car, a feature of the proposed car is the new seats which consist of two parts, one a reclining lounge chair, and the other a folding ottoman which forms a full-length leg rest. Chairs are arranged in groups to give parties of up to five passengers informal conversational groupings.

Aitchison expressed the view that the arrangements between the individual carriers and the W. S. A. would constitute pooling of revenues within the meaning of section 5(1). In view of the temporary nature of the authority granted, and the circumstances in which it was sought, he did not press the point, however.

July Accident Statistics

The Interstate Commerce Commission on September 12 made public its Bureau of Transport Economics and Statistics' preliminary summary of steam railway accidents for July and the first seven months of 1945, compared with the same 1944 periods. The compilation, which is subject to revision, follows:

Item	Month of July		7 months ended with July	
	1945	1944	1945	1944
Number of train accidents	1,386	1,259	10,247	9,462
Number of casualties in train, train-service and nontrain accidents:				
Trespassers:				
Killed	207	184	942	867
Injured	127	100	689	643
Passengers on trains:				
(a) In train accidents*				
Killed	1	34	18	43
Injured	287	280	1,070	872
(b) In train-service accidents				
Killed	9	5	42	33
Injured	298	281	1,574	1,659
Travelers not on trains:				
Killed	1	1	6	7
Injured	107	70	669	592
Employees on duty:				
Killed	66	69	521	581
Injured	4,056	4,060	27,503	26,663
All other nontrespassers:**				
Killed	151	115	1,140	1,106
Injured	455	491	4,015	3,834
Total—All classes of persons:				
Killed	435	408	2,669	2,637
Injured	5,330	5,282	35,520	34,263

* Train accidents (mostly collision and derailments) are distinguished from train-service accidents by the fact that the former cause damage of more than $150 to railway property.

** Casualties to "Other nontrespassers" happen chiefly at highway grade crossings. Total highway grade-crossing casualties *for all classes of persons, including both trespassers and nontrespassers*, were as follows:

Persons:				
Killed	121	98	1,018	983
Injured	213	244	2,267	2,225

Bilbo Opposes Land-Grant Bill

Senator Bilbo, Democrat of Mississippi, last week indicated his opposition to the pending bill—the House-approved H.R. 694—to repeal remaining provisions of the land-grant-rate law. The bill was passed over at the September 14 call of the Senate calendar, but not until Mr. Bilbo had served notice that he will have some "extended remarks" to make when it comes up for consideration.

Meanwhile Senator Austin, Republican of Vermont, had called attention to the Senate interstate commerce committee's amendment which would make repeal effective "90 days after the cessation of hostilities with Japan as proclaimed by the President or declared by concurrent resolution of the two houses of Congress." He calculated that this would make repeal effective 90 days after September 2, the date of President Truman's V-J Day proclamation. As passed by the House, the bill provided that the effective date of repeal would be 90 days after the bill's enactment date.

"Regardless of the amendment," Mr. Bilbo thinks the repealer is a "poor compromise," and he proposes to discuss the bill "so that the country may know just what is involved in it." He recalled that this is the "third or fourth" time that an attempt has been made to enact repeal legislation. As he sees it, it is an attempt "to take out of the treasury of the United States tax moneys amounting to approximately $1,000,000,000" to be used "in the interests of the railroads of the country who have been lobbying here for three or four years to have this measure passed."

Harlan Leaves O. D. T.

M. E. Harlan, assistant director, passenger traffic, Railway Transport Department, Office of Defense Transportation, resigned effective September 15 and is returning to the Northern Pacific in his former position of assistant general passenger agent. Mr. Harlan's duties at O. D. T. have been taken over on a temporary basis by Richard H. Clare, assistant general passenger agent of the Pennsylvania, who held the position during the latter half of 1944.

Restrictions on Group Travel Off October 1

Removal of all restrictions on group travel and on activities of travel agencies, effective October 1, has been announced by the Office of Defense Transportation. The restrictions will be lifted by the revocation of General Order ODT-57, which was issued July 21 to prohibit organized group travel and the sale of railroad accommodations to travel agencies. A partial revocation has made the order non-applicable to business travel since August 17.

Senate Passes Airport Bill

The Senate on September 12 passed and sent to the House the federal-aid airport bill, S. 2, sponsored by Senator McCarran, Democrat of Nevada. Meanwhile, however, the Senate had adopted an amendment sponsored by Senator Taft, Republican of Ohio, which reduced the proposed federal contribution from $100,000,000 a year for a five-year period to $75,000,000 a year—a total of $375,000,000 instead of $500,000,000.

Federal-aid airport legislation was recommended by President Truman in his September 6 message to Congress, and the Senate's favorable action came within a week after the message was delivered, although the bill had been pending on the Senate calendar for some time. Similar legislation has also been pending in the House where it was introduced by Chairman Lee of the committee on interstate and foreign commerce.

Thirty-Six Hour Week Asked by Shop Craft Unions

The seven railway shopcraft unions have announced that they will seek a 6-hour day, 6-weekday work week from the railways with no reduction in pay, according to a statement by William Jewell, president of the Railway Employees Department of the American Federation of Labor; that is, the unions want pay for 48 hours for working 36; or an increase of 33⅓ per cent in hourly wages. The decision to seek a shorter work week was reached after a three-day conference of general chairmen, meeting in Chicago on September 12, 13 and 14.

Mr. Jewell said that the railroads "will be requested to agree to establish a six-hour day, six week-days a calendar week, without reduction in present straight-time weekly compensation, instead of the present eight-hour day, six week days a calendar week." He stated that no changes in working rules would be sought other than those needed to make the requested shorter work-week effective.

The seven cooperating unions will file formal notice upon the carriers on September 25, according to Mr. Jewell, who added that a detailed public statement explaining the reasons for the request would be issued shortly. The group, of which he is president, represents 400,000 railway employees and has contracts on all of the nation's major rail carriers except the Pennsylvania and Western Maryland, he said.

The organizations filing the demand are: The International Association of Machinists; the International Brotherhood of Boilermakers, Iron Shipbuilders & Helpers of America; the International Brotherhood of Blacksmiths, Drop Forgers & Helpers; the Sheet Metal Workers International Association; the International Brotherhood of Electrical Workers; the Brotherhood of Railway Carmen of America; and the International Brotherhood of Firemen, Oilers, Helpers, Roundhouse & Railway Shop Laborers.

Will Discontinue Operation of Government Pipelines

Operation of five government-owned oil pipelines, including "Big Inch" and "Little Big Inch," will be discontinued "within the next 30 to 60 days" said a September 14 announcement from the Reconstruction Finance Corporation. The announcement also said that R. F. C. "invites negotiations for these pipelines, either on a purchase or lease basis."

"Big Inch," in which the government's investment approximated $78,535,000, is the 24-inch crude-oil line extending from Longview, Texas, to the New York Harbor area, 1,254 mills. "Little Big Inch" in which the government invested about $67,300,000 is the 20-inch petroleum products line from Beaumont, Texas, to New York, 1,475 miles.

The other three lines to be discontinued are the $4,210,000 Florida Emergency Pipeline extending from Carabelle, Fla., to Jacksonville, 200 miles; the $6,130,000 Southwest Emergency Pipeline from Corpus Christi, Texas, to Houston, 154 miles; and the $3,400,000 extension of the Plantation Pipeline between Greensboro, N. C., and Richmond, Va., 175 miles. The remaining line owned by R. F. C. is the 82-mile Ohio Emergency Pipeline extending from Fostoria, Ohio, to Akron; it is being operated under lease by a private company.

The R. F. C. announcement brought forth, in the appendix to the September 17 Congressional Record, an "extension of remarks" by Representative Voorhis, Republican of California. It seemed to him that "this haste in abandoning these pipelines and putting them up for sale is a questionable policy, particularly when we know that this is precisely the kind of action which

Selected Income and Balance-Sheet Items of Class I Steam Railways

Compiled from 132 reports (Form IBS) representing 136 steam railways
(Switching and Terminal Companies Not Included)

Income Items	All Class I Railways — For the month of June 1945	For the month of June 1944	For the six months of 1945	For the six months of 1944
1. Net railway operating income	$96,114,897	$99,517,169	$535,786,809	$552,425,261
2. Other income	22,150,209	18,804,100	93,652,919	88,737,047
3. Total income	118,265,106	118,321,269	629,439,728	641,162,308
4. Miscellaneous deductions from income	2,722,956	6,047,785	15,387,814	21,732,712
5. Income available for fixed charges	115,542,150	112,273,484	614,051,914	619,429,596
6. Fixed charges:				
Rent for leased roads and equipment	12,940,786	12,988,627	74,739,940	74,910,037
Interest deductions[1]	33,903,724	35,367,532	194,933,445	203,107,951
Other deductions	111,459	119,293	665,133	782,914
Total fixed charges	46,955,969	48,475,452	270,338,518	278,800,902
7. Income after fixed charges	68,586,181	63,798,032	343,713,396	340,628,694
8. Contingent charges	2,831,441	2,814,658	16,911,651	17,005,370
9. Net income	65,754,740	60,983,374	326,801,745	323,623,324
10. Depreciation (Way and structures and equipment)	27,840,468	26,853,929	165,760,744	159,441,874
11. Amortization of defense projects	20,194,176	15,236,918	117,720,571	89,004,657
12. Federal income taxes	114,058,125	121,271,818	602,487,212	643,896,749
13. Dividend appropriations:				
On common stock	9,794,656	7,083,759	79,380,438	71,510,285
On preferred stock	3,571,713	1,705,517	21,753,059	14,987,915
Ratio of income to fixed charges	**2.46**	**2.32**	2.27	2.22

Selected Assets and Liability Items	All Class I Railways — Balance at end of June 1945	Balance at end of June 1944
17. Expenditures (gross) for additions and betterments—Road	$99,973,598	
18. Expenditures (gross) for additions and betterments—Equipment	139,061,042	
19. Investments in stocks, bonds, etc., other than those of affiliated companies (Total, Account 707)	573,925,915	$591,321,081
	511,089,378	431,412,915
20. Other unadjusted debits		
21. Cash	1,031,072,306	950,430,682
22. Temporary cash investments	1,836,244,942	1,837,994,183
23. Special deposits	207,361,920	162,646,840
24. Loans and bills receivable	350,763	185,698
25. Traffic and car-service balances—Dr.	40,648,496	47,006,420
26. Net balance receivable from agents and conductors	137,251,186	146,158,712
27. Miscellaneous accounts receivable	650,500,754	649,110,078
28. Materials and supplies	606,637,876	588,862,081
29. Interest and dividends receivable	35,752,065	25,845,286
30. Rents receivable	3,474,808	1,780,344
31. Other current assets	50,767,785	61,143,741
32. Total current assets (items 21 to 31)	4,600,062,901	4,471,164,065
40. Funded debt maturing within 6 months[2]	112,227,039	203,940,832
41. Loans and bills payable	5,354,059	6,138,386
42. Traffic and car-service balances—Cr.	206,207,220	209,874,090
43. Audited accounts and wages payable	426,578,231	428,164,846
44. Miscellaneous accounts payable	215,022,259	144,305,556
45. Interest matured unpaid	70,562,791	70,999,490
46. Dividends matured unpaid	27,014,874	25,203,892
47. Unmatured interest accrued	45,838,934	58,666,539
48. Unmatured dividends declared	18,145,906	13,624,848
49. Unmatured rents accrued	20,229,968	17,501,823
50. Taxes accrued	1,630,052,551	1,739,951,283
51. Other current liabilities	159,310,463	96,668,778
52. Total current liabilities (items 41 to 51)	2,824,317,256	2,811,099,531
53. Analysis of taxes accrued:		
U. S. Government taxes	1,478,524,683	1,583,008,502
Other than U. S. Government taxes	151,527,868	156,942,781
54. Other unadjusted credits	715,696,213	440,059,260

[1] Represents accruals, including the amount in default.
[2] Includes payment of principal of long-term debt (other than long-term debt in default) which will become due within six months after close of month of report.
Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Subject to revision.

those interests which most bitterly oppose any kind of true common carrier for petroleum products would like to see taken." Mr. Voorhis has been told by "practically every person who has studied the oil industry" that the "key to the monopolistic power of the major companies lies in their control of pipelines." He had previously said that no one except a big oil company or a combination of the major companies could "conceivably" buy "Big Inch."

The Californian also contended that R. F. C. was prohibited by the Surplus Property Act from selling pipelines which cost in excess of $5,000,000 unless and until a report on the matter had been submitted to Congress. "The only exception to this," he added, "is to allow the Surplus Property Board to lease any such property for a term of not more than five years." As noted in the *Railway Age* of September 15, page 454, the railroads are on record in opposition to any disposition of the government-owned pipelines for operation as transportation of natural gas.

Liquidating O. D. T.

Field offices of the Office of Defense Transportation's Division of Transport Personnel were closed on September 20. There were seven such offices located in New York, Cleveland, Ohio; Chicago, Kansas City, Mo.; Denver, Colo.; San Francisco, Calif., and Portland, Ore. All transport personnel matters will now be handled with the division's Washington headquarters.

Other O. D. T. liquidating actions of the past week included the revocation, effective November 1, of 756 supplementary orders under General Order ODT-3, Revised, covering joint-action plans entered into by 5,026 for-hire motor carriers in over-the-road service; and the revocation of 419 joint-action plans involving local delivery operations of more than 6,000 solid-fuel dealers. Effective September 20, O. D. T. dissolved its National Tank Truck Advisory Committee as well as 320 additional advisory field committees, and it has announced the dissolution, effective November 1, of its 1,036 agricultural industry transportation committees.

W. Rodney Long Dies

W. Rodney Long, a specialist for the past 25 years on foreign railways and railway equipment in the Bureau of Foreign and Domestic Commerce of the Department of Commerce, at Washington, died last week at his home there.

Mr. Long, author of a number of books on transportation subjects, was best known for his work of publishing a series of handbooks on the Railways of South America. Another of his works was "Transport Control Abroad."

O. D. T. Export Controls Have Saved 15 Million Car-Days

More than 15,000,000 car-days have been saved in the past three years through its exports control system of regulating railroad port traffic, according to the Office of Defense Transportation. A September 19 statement said that by the use of this unit permit system traffic in port areas has been kept flowing and "there has been none of the serious congestion that occurred in World War I."

In the operation of the system O. D. T. has had the cooperation of the Association of American Railroads, War Shipping Administration, Army and Navy. The resultant economy in the use of railroad equipment was highlighted in the O. D. T. statement by comment from A. S. Johnson, assistant director of the Railway Transport department.

"Early in 1942 immediately after Pearl Harbor," Mr. Johnson said, "average detention per car in the port areas was considerably in excess of 10 days. O. D. T. took control of export traffic in July, 1942, with the result that for the year 1942 detention averaged 8.6 days per car. During 1943 average detention dropped to 7.6 days per car, a saving of 2,883,342 car-days when compared with 8.6 days per car for 1942. For 1945 through August the average was held to 4.8 days, resulting in the saving of 5,564,003 car-days. Disregarding the savings made in 1942 subsequent savings amounted to 15,415,676 car-days. Assuming that 15 car-days are equal to the release of one car for one round trip in other wartime service the saving was approximately 1,000,000 railroad cars."

Mr. Johnson also stated that O. D. T. was not yet in a position to release export controls, but would probably do so when the method of handling exports involved in foreign relief programs has been definitely determined.

August Ton-Miles

The volume of freight traffic handled by Class I roads in August amounted to 56,600,000,000 ton-miles, according to a preliminary estimate by the Association of Ameri-

can Railroads. The decrease under August, 1944, was 12 per cent.

Revenue ton-miles of service performed by Class I roads in the first eight months of 1945 was three per cent under 1944, and less than one per cent greater than the corresponding period two years ago.

	1945	1944	Per cent change
First 6 months	364,927,555,000	368,565,480,000	Dec. 1.0
July	[a]60,500,000,000	62,539,667,000	Dec. 3.3
August	[b]56,600,000,000	64,459,523,000	Dec. 12.2
Total 8 months	482,027,555,000	495,564,670,000	Dec. 2.7

[a] Revised estimate.
[b] Preliminary estimate

The above table summarizes revenue ton-miles for the first eight months of 1945 and 1944.

Would Keep I. C. C.'s Independent Status

(*Continued from page 496*)

"independence should be jealously preserved and protected from political or other pressures," the senator was advised.

What I. C. C. Bar Thinks—Somewhat similar views were expressed by Harry C. Ames, chairman of the legislative committee of the Association of Interstate Commerce Commission Practitioners, who appeared before the committee last week to urge that the bill he modified to exempt the commission from the reorganization program. The purposes of the proposed legislation, Mr. Ames said, appear to be to obtain greater efficiency and economy and to eliminate duplicating facilities through consolidation of government organizations that are now separate.

Because the commission's primary functions, the regulation of rates and the granting and supervision of operating rights of rail, water, truck, and pipeline operators and freight forwarders, are not duplicated by any other agency of the government, the practitioners' spokesman was unable to see how any economy or elimination of facilities could be accomplished by depriving the commission of its long-cherished political independence. Buttressing his views with citations from remarks of Secretary of State Byrnes and court decisions, he argued along the lines outlined by Chairman Rogers for the preservation of this independence, asserting that the commission is just as much a "creature and agent of Congress" as the General Accounting Office, which the bill exempts from the President's authority.

Would Exempt N. M. B.—Generally similar views, insofar as the exemption of the commission is concerned, were expressed on September 17 by A. E. Lyon, executive secretary of the Railway Labor Executives Association, who went on to urge similar exemption from the reorganization legislation for the National Mediation Board, National Railroad Adjustment Board, and Railroad Retirement Board. The railway unions for which he speaks consider maintenance of the independence of these government agencies to be essential to the efficiency with which they operate, the witness went on to say, and their independent operation has been beneficial, in his opinion, to the carriers and their employees.

Another expression of support for an independent I. C. C., which would be exempt from the reorganization program, came from the National Industrial Traffic League, which has set up a special committee to consider this legislation. In a statement filed with the House committee on expenditures in the executive departments, the exemption of the commission and various other government agencies from the scope of the proposal was upheld by the chairman of the N. I. T. League's special committee, A. H. Schwietert, who expressed strong opposition to efforts to amend a reorganization bill before the House (H. R. 3325, introduced by Representative Manasco, Democrat of Alabama). This bill originally provided for the exemption of 21 organizations, including the commission, from the President's power to reorganize the executive departments, but the committee, before unanimously approving the measure, modified it so that only four agencies—the I. C. C., General Accounting Office, Federal Trade Commission, and Securities and Exchange Commission—are so excluded. This means, of course, that the bill in this stage provides no protection from possible reorganization moves for the N. M. B. and R. R. B.

No More Joint Certificates for Motor Routes

Confessing that its previous actions in that connection were "ill-advised and unsound," the Interstate Commerce Commission, Division 5, has determined that it will not authorize the issuance of any additional jointly-held certificates or permits covering motor carrier operations. The determination was announced in the division's report on further hearing in *No. MC-668, Inter City Transportation Co., Inc., Common Carrier Application.*

Inter City and New York-New Jersey Transit Co., Inc., now hold a certificate authorizing them jointly to conduct a single common-carrier bus operation between Paterson, N. J., and Manhattan, N. Y. Inter City also conducts extensive operations independently of Transit, and the report says it has been conducting a through service between points on its individually-authorized routes and points on the route authorized by the certificate held jointly with Transit. The commission expressed the opinion that this "tacking" of operating rights is "unlawful"; and it refused to extend the route authorized under the jointly-held certificate. Without undertaking to revoke that joint certificate, or to determine its power to take such action, the commission went on to offer Inter City alternative propositions for extending its routes—either by entering "appropriate" interchange arrangements, or requesting cancellation of the jointly-held certificate and issuance to Inter City of a single certificate covering the whole route. "We suggest the latter course as most advantageous," the report added.

The report states that the commission has issued jointly-held certificates to only two other pairs of carriers whose operations (in the same territory as the Inter City-Transit route) "are also now under study." Among objections to jointly-held certificates, which were mentioned in the report, are "administrative difficulties" arising from the inability to get satisfactory reports, and "difficulty in the matter of tariffs."

Materials and Prices

The following is a digest of orders and notices that have been issued by the War Production Board and the Office of Price Administration since September 4, and which are of interest to railways:

Cast Iron Soil Pipe—An increase of four per cent or $3 per net ton in ceiling prices for cast iron soil pipe and fittings is provided in Amendment No. 4 to RPS-100, effective September 7, and may be passed on to customers by all resellers.

The increase is authorized for six months only, O. P. A. said; during the interval it will conduct a cost survey to determine what general level of prices the cost increases indicate is necessary. The higher price will assist industry in expanding cast iron soil pipe production, which is needed for the resumption of building construction, O. P. A. said.

Control Regulations — An amendment to CMPR-4 governing sales of controlled materials by warehouses and distributors, issued September 7, providing for the automatic revocation of that regulation with the expiration of the C. M. P. which governs the distribution of steel, copper and aluminum, on September 30.

Electrical Appliances—Reconversion in the electrical appliances field will be accelerated through the release of mica from government stockpiles, pending resumption of private purchase of mica now restricted by government purchasing programs, W. P. B. said recently. The present government purchase commitments will terminate on November 30, and steps are being taken to allow parallel private purchase prior to that time.

W. P. B. also disclosed that an early relaxation of import controls of Order M-63 will permit the importation of most mica without any government restrictions.

Lumber—Price control has not been suspended on any "lumber and primary forest products," the O. P. A. announced recently in Supplementary Order No. 129—Exemption and Suspension from Price Control of Machines, Parts, Industrial Materials and Services—which became effective August 31; a title crossline inadvertently appeared in the suspension section of the order reading "Lumber and Primary Forest Products."

The appearance of this line has led to trade reports that price control had been suspended on "lumber and primary forest products." O. P. A. said an amendment to the order would be issued shortly, eliminating the line "Lumber and Primary Forest Products" from the order.

Lumber—Distribution of lumber will be free from controls October 1, the W. P. B. announced September 12. The revocation of lumber order, L-335, issued in June 1944, to provide the vast amounts of lumber needed for carrying on the war, becomes effective September 30.

Although lumber production this year is expected to amount to only 29,500,000,000 f. b. m., compared with 32,500,000,000 in 1944, military requirements have declined so sharply since the end of the war that lumber is no longer in critically short supply.

Allotments of lumber for the third quarter remain in force until the expiration of the order, but no further allocation of lumber will be made, W. P. B. pointed out.

Citing figures indicative of the amount of lumber released for civilian use as a result of the end of the war, W. P. B. said that in the first half of 1945, 12,000,000,000 of the 15,660,000,000 f. b. m. consumed was used for direct and indirect military requirements (76 per cent). Estimated military needs for the second half of

the year are approximately 4,000,000,000 f. b. m. which represents approximately 20 per cent of the estimated total.

Military requirements amounted from 15 per cent of total consumption in 1941 to 74 per cent in 1944. This heavy demand made necessary the issuance of an over-all control order.

Prices

Gray Iron Castings—An increase of 10 per cent in manufacturers' "base-period" ceiling prices for gray iron castings is provided by Amendment No. 10 to MPR-244 which became effective September 17.

The increase is being authorized, O. P. A. said, because a disparity has developed between "base-period" and "formula-calculated" ceiling prices for gray iron castings and to encourage production of "base-period" work by the original producer rather than have the patterns moved to new shops operating at "formula" prices.

Ceiling prices for most gray iron castings originally were established as the highest prices charged between August 1, 1941, and February 1, 1942. Subsequently, producers were permitted to calculate ceilings for other iron castings, including those produced by others in the base period, on a "formula" basis using labor, materials and other costs in computing these ceilings.

Today, O. P. A. said, the "base-period" ceiling prices do not reflect increases in production costs since 1941.

Gypsum Plaster—An increase of $2.40 a net ton in manufacturers' ceiling prices for calcined gypsum plaster "bag goods" (with the exception of small specialty packaged material) was announced by O. P. A. Amendment No. 7 to Order No. 1 under section No. 25 MPR-592, effective September 14.

Construction

BALTIMORE & OHIO.—This railroad has awarded contracts for the construction of a pipe line from Elsmere Junction to Wilsmere, Del., at estimated cost of $36,000, to the Huffman-Wolfe Company of Philadelphia, Pa.; for the construction of a mine spur at Midvale, Ohio, at estimated cost of $39,000, to the Acme Construction Company, Cleveland, Ohio; and for the extension of its bridge at Wilsmere, at estimated cost of $45,000, to the Empire Construction Company, Baltimore, Md.

CHICAGO, ROCK ISLAND & PACIFIC.—Division 4 of the Interstate Commerce Commission has authorized this road to build a new single-track main line from a point near Floris, Iowa, to a point near Paris, 16.19 miles, as a part of its program of improving the grade and curvature characteristics of its heavy-traffic lines. The new work will result in a reduction of 1.43 miles of distance and 129 ft. in rise and fall; central angle of curvature will be reduced from 722 deg. to 124 deg.; maximum curvature from 4 deg. to 1 deg.; and ruling grade from 1.02 per cent to 0.5 per cent. Net cost is estimated as $1,690,255.

FLORIDA EAST COAST.—This railroad has awarded a contract for the construction of Diesel-electric locomotive servicing facilities at Miami, Fla., at estimated cost of $25,000, to John B. Orr, Inc., of Miami.

MISSOURI PACIFIC.—This road has applied to the Interstate Commerce Commission for authority to build 2,984 ft. of interchange tracks connecting at Richards, Mo., with the Kansas City Southern.

NEW YORK CENTRAL.—This railroad has awarded contracts for revamping two 600-hp. boilers in its power house at Harmon, N. Y., to the Union Iron Works, Inc., of New York; for the construction of a hump yard office building at its DeWitt yard, Minoa, N. Y., to the Fred Ballard Construction Company, Syracuse, N. Y.; and for alterations and extensions to the Railway Express building, Syracuse, to the John W. Ryan Construction Company of New York.

READING.—This railroad has awarded a contract to furnish and erect a new steel superstructure for its bridge at Fairhill Junction, Philadelphia, Pa., at estimated cost of $35,300, to the Phoenix Bridge Company, Phoenixville, Pa.

Equipment and Supplies

FREIGHT CARS

The WESTERN MARYLAND has let an order for the rebuilding of 300 50-ton box cars to the Bethlehem Steel Company.

The NEW YORK CENTRAL has ordered 750 70-ton covered hopper cars from Despatch Shops.

The NORTHERN REFRIGERATOR LINE has ordered 500 40-ton refrigerator cars from Despatch Shops.

The ST. LOUIS-SAN FRANCISCO has ordered 200 70-ton steel ballast cars from the American Car & Foundry Co.

The ST. LOUIS SOUTHWESTERN is reported to have ordered 50 70-ton flat cars from the company's own shops.

The PERE MARQUETTE has ordered 200 50½-ft. box cars of 50 tons' capacity from the Ralston Steel Car Company and 100 70-ton hopper cars from the Greenville Steel Car Company.

The CHICAGO, BURLINGTON & QUINCY is reported to have ordered 1,500 freight cars from its own shops including 500 50-ton box, 500 50-ton automobile, 100 70-ton flat, 350 50-ton hopper and 100 box cars.

The BALTIMORE & OHIO has placed orders for 2,000 50-ton hopper cars allocating 1,000 to the Bethlehem Steel Company, 500 to the Pressed Steel Car Company and 500 to the Ralston Steel Car Company. The inquiry for this equipment was reported in the *Railway Age* of July 21.

The CHICAGO, ROCK ISLAND & PACIFIC is reported to have ordered 750 40½-ft. auto-box cars of 50 tons' capacity and 250 50½-ft. auto-box cars of 50 tons' capacity from the railroad's own shops. The inquiry for this equipment was reported in the *Railway Age* of July 7.

SIGNALING

The NORTHERN PACIFIC has placed an order with the Bendix Radio Division of the Bendix Aviation Corporation for a limited number of Type RTR1 and RTG1 train communication sets to be used in continuing field tests. Delivery is expected about January 1. The Northern Pacific recently completed a month's testing of this type of equipment in handling switch engines in the various yards in Seattle, Wash., and also in tests of front-to-rear communication on moving trains on the main line between St. Paul, Minn., and Seattle in cooperation with the Bendix Corporation. The equipment now on order is for further testing of switch engine control in the Northern Pacific yards in St. Paul and in train operation out of the Twin Cities.

The UNION SWITCH & SIGNAL CO. is furnishing six sets of four-indication continuous code cab signal equipments for installation on Diesel-passenger locomotives being built for the Chicago, Rock Island & Pacific to operate in the train control territory between Chicago and Rock Island, Ill.

The LOUISVILLE & NASHVILLE has ordered materials from the General Railway Signal Company to add facilities to the NX control machine at Latonia, Ky., for the control of an additional turnout. The additional panel equipment will consist of three entrance knobs, three exist buttons, a track indication light and a movable-point switch indicator with a lock light.

The CHICAGO, BURLINGTON & QUINCY has ordered materials from the General Railway Signal Company for the installation of an all-relay electric interlocking system at Pacific Junction, Iowa. The control machine will be equipped with 10 track indication lights, five switch levers and three signal levers for the control of four switch machines, two electric switch locks and eight signals at a crossing and an interlocking.

The DENVER & RIO GRANDE WESTERN has ordered 15 each of locomotive and caboose sets of the Aireon Manufacturing Company's combination space radio and inductive train communication equipment, in addition to sufficient equipment for ten wayside stations between Denver, Colo., and Grand Junction via the Moffett Tunnel, 275 miles. The locomotive sets will be installed on 15 Diesel-electric freight locomotives, which will be operated with the 15 assigned cabooses also to be equipped. Communication between the locomotive and the caboose will be by means of space radio, and will extend over the entire system, while inductive equipment will provide channels between the caboose and wayside stations.

The NEW YORK, NEW HAVEN & HARTFORD has placed an order with the Union Switch & Signal Co. for the materials necessary to extend the interlocking facilities at Providence, R. I., to include the functions at the west end of the station and involving a 7½-ft. Style C all-relay interlocking machine to control 48 new H-5 searchlight signals, 30 added M-2 electric switch layouts, and including SL-6 switch locks, plug-in type relays, rectifiers and transformers. When this installation has been completed it will, together with the facilities at the east end of the station, comprise an interlocking approximately 10,000 ft. long controlled from a 15-ft. machine of the all-relay type located in the tower just east of the station. The construction work will be performed by the railroad company's forces.

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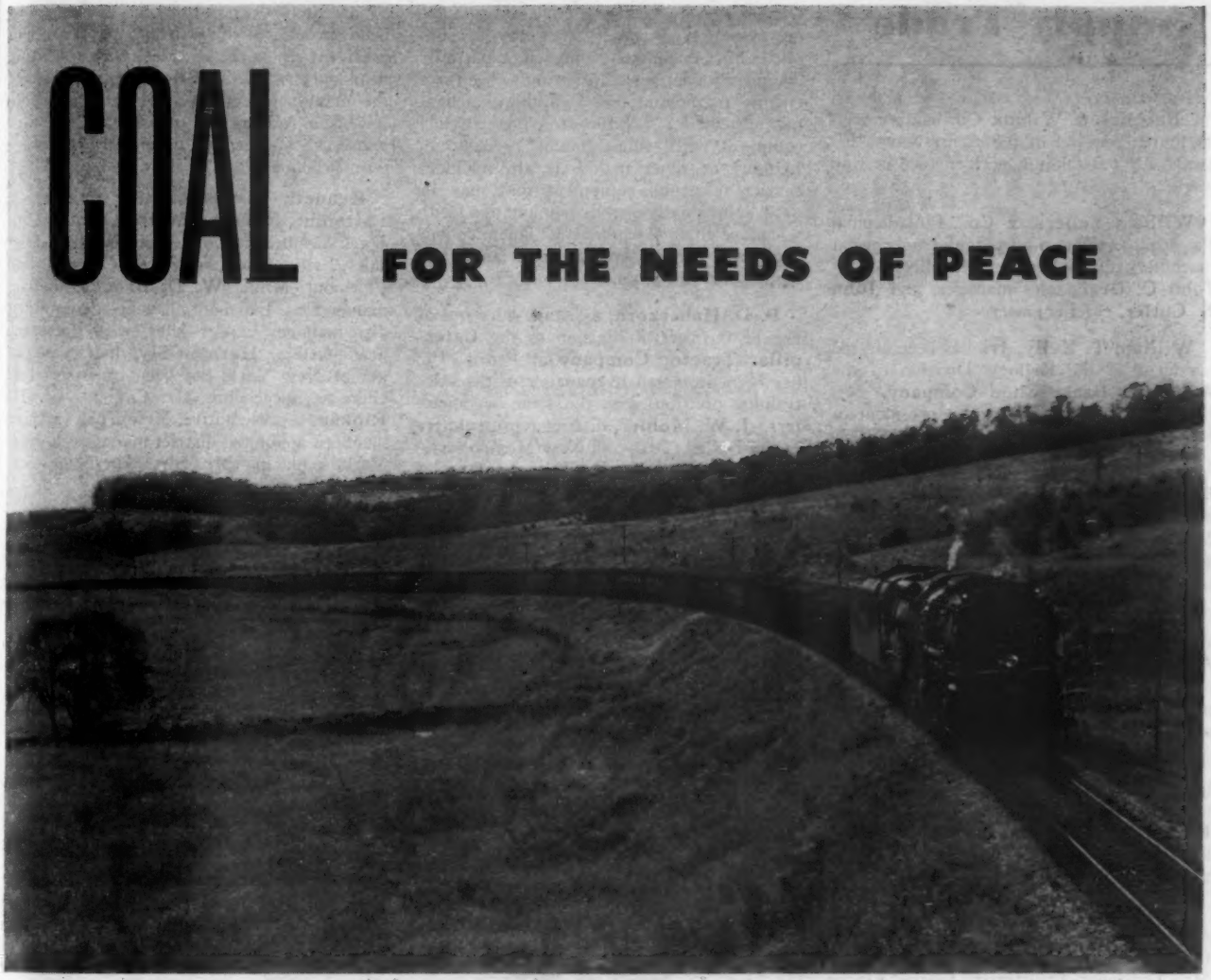
COAL FOR THE NEEDS OF PEACE



Virginian Railway 2-6-6-6 built by Lima

The Lima-built 2-6-6-6s The Virginian Railway placed in service to handle the war's tremendous coal traffic demands, are already speeding fuel to meet the needs of reconverting industries.

Capable of hauling the heaviest freights, over mountain grades, at sustained high speeds, these giant steam locomotives meet the highest standards of motive power efficiency.

LIMA LOCOMOTIVE WORKS LIMA LOCOMOTIVE WORKS INCORPORATED INCORPORATED, LIMA, OHIO

Supply Trade

The Alliance, Ohio, gun mount plant of the **Babcock & Wilcox Co.** has received its fourth renewal of the Army-Navy "E" award for outstanding performance in war work.

William Sellers & Co., Philadelphia, Pa., have announced a hydraulic and special machinery division under the direction of **John C. Graf,** sales manager, and **John B. Cutler,** chief engineer.

William T. Kelly, Jr., has been elected president of the Kellogg Division of the **American Brake Shoe Company.** Mr. Kelly has been executive vice-president of Kellogg since December, 1944.

John W. Cyler and **F. Theodore Hegeman** have been appointed to the sales department of **Electronic Laboratories.** My Cyler was head of the order department. Mr. Hegeman will represent Electronic in each of its sales fields.

Arthur F. Becker, for the last twelve years assistant to the vice-president of the **American Arch Company** at its Chicago offices, has been transferred to the company's New York offices in the same capacity.

L. H. Gegenheimer, after a four-year leave of absence for war duties in Washington, D. C., has returned to the **Timken Roller Bearing Company,** Canton, Ohio, in his former capacity as sales engineer in the industrial division.

O. M. Hullinger has been appointed manager of the Chicago office of the **Elastic Stop Nut Corporation of America.** Mr. Hullinger transferred to the Elastic Stop Nut Corporation from the Line Material Company, where he was manager of transfer sales.

Robert D. Fleischer has been appointed general sales manager for southern territories in the **Ardco Manufacturing Company's** newly-organized branch, with headquarters at Richmond, Va. Mr. Fleischer served in various capacities with several New York advertising firms and as sales manager for several engineering firms before being appointed to his present position.

The **Butler Manufacturing Company,** Kansas City, Mo., has acquired all patent and manufacturing rights of the Steel Building division of Globe-Wernicke Company, and will add the features of the Globe-Wernicke buildings to its own designs. Quantity production on a new line of steel buildings is scheduled for the first of the year.

The **Automatic Electric Sales Corporation** has been appointed distributor to railroads of the carrier telephone and telegraph equipment manufactured by **Lenkurt Electric Company,** San Francisco, Cal., licensed manufacturer under A. T. & T. patents. Under a separate agreement **International Automatic Electric Corporation** has been named export distributor. Initially the range of Lenkurt equipment will include a single-channel carrier telephone system (type 12); a three-channel system type (32), which may be supplied either completely equipped or partially equipped for later expansion up to the three channel maximum; and a special one-channel system for addition to lines already equipped with single-channel system of Lenkurt or other make. It also includes carrier telegraph equipment that may be used individually or in combination with telephone channel equipment. The telephone equipment may be equipped with automatic dialing for long lines.

F. D. Haberkorn, assistant sales manager of the central division of the **Caterpillar Tractor Company** at Peoria, Ill., has been promoted to manager of the sales training division, with the same headquarters. **J. W. Mohler,** district representative in the Dallas, Tex., and New Mexico territory, has been advanced to assistant sales manager of the central division, succeeding Mr. Haberkorn.

Donald L. Whitehouse, whose appointment as manager of the Chicago office of the **Monroe Auto Equipment Company,** Monroe, Mich., was reported in the *Railway Age* of September 15, was born in Chicago on January 14, 1906. Upon his graduation

Donald L. Whitehouse

from Washington University, St. Louis, Mo., in 1933, he went with the Firestone Tire & Rubber Co. in the production control department at Los Angeles, Cal. In 1939 he became sales manager of the Hydro-Gas Company, Winston-Salem, N. C., and in 1940 Mr. Whitehouse was made assistant manager of the Washington, D. C., office of the Monroe Auto Equipment Company, the position he was holding at the time of his recent appointment.

Daniel P. Morgan has been appointed to the railroad sales engineering staff of **Bowser, Inc.,** Fort Wayne, Ind., with headquarters in Washington, D. C. He will cover the southeast railroad division. Mr. Morgan formerly was assistant district sales manager in the Philadelphia, Pa., office of the Pittsburgh Steel Foundry Corporation. Prior thereto he was a special railway representative of the Hanna Stoker Company.

H. A. Squibbs, assistant general manager of sales of the **American Steel & Wire Co.,** (a subsidiary of the United States Steel Corporation) at Chicago, has been promoted to assistant to the vice-president in charge of sales, with the same headquarters. **C. T. Gilchrist,** manager of the manufacturers products sales division, has been advanced to assistant general manager of sales, succeeding Mr. Squibbs, with headquarters as before at Chicago.

Kenneth Cavins, district manager of **Fairmont Railway Motors, Inc.,** Chicago, has been appointed manager district sales, with headquarters in Chicago and Fairmont, Minn. **W. D. Brooks,** district manager at Fairmont, has been appointed also manager export sales, with the same headquarters. **Harmon Sly,** district manager at New York, has been transferred to Chicago, succeeding Mr. Cavins. **W. H. Ripken,** representative, New York district, has been appointed district manager at New York, replacing Mr. Sly. These appointments are effective October 1.

Raymond H. Gaver has been appointed chief engineer and **Jonas D. Bigelow** development engineer of the newly-established railway equipment division of the **American Welding & Manufacturing Co.,** Warren, Ohio. Mr. Gaver, who will head the division, has been with the company since 1944, working at research and development on new car and locomotive components. Mr. Bigelow joined American Welding in 1942. Prior thereto he was special engineer in the office of the general superintendent of motive power and rolling stock of the New York Central.

Herman H. Pancake, sales engineer, has been appointed manager of mine car sales of the **American Car & Foundry Co.** with headquarters in New York to succeed **J. L. McDowell,** who recently retired at his own request. Mr. Pancake began his career with the American Car & Foundry Co. in July, 1923, as a draftsman and later advanced to chief draftsman at the Huntington, W. Va., plant. He was transferred to the sales department as sales agent in the mining territory in 1933. Three years later he was appointed local engineer at the Huntington plant and subsequently engineer in charge of mine car construction with headquarters at the Berwick, Pa., plant. He later served as sales engineer in the Pittsburgh, Pa., office.

Paul H. Crago has been appointed in charge of a branch laboratory recently opened in New York by Raymond M. Wilmotte, director of the **Wilmotte Laboratory, Inc.,** of Washington, D. C. Mr. Crago has been associated with Specialties, Inc., as executive engineer in charge of research and development of ordnance instruments for the armed forces, and with the Federal Telephone & Radio Corp. He formerly was section engineer with the Union Switch & Signal Co. in charge of the design and application of electro-magnetic signalling devices for railroads. Associated with Mr. Crago will be **Hugh J. Cameron,** formerly a representative of the Girdler Corporation and section chief in charge of non-metallic materials with the radio and radar division of the War Production Board, and **G. Curtis Engel,** formerly production manager of General Electronics, Inc., and manager of the laboratory of the General Time Instruments Corpora-

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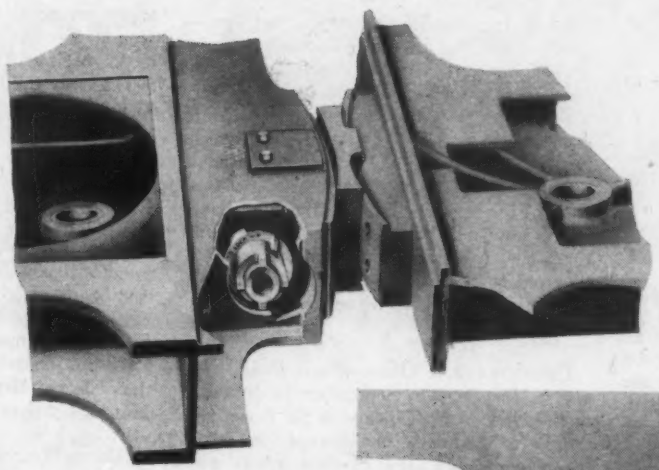
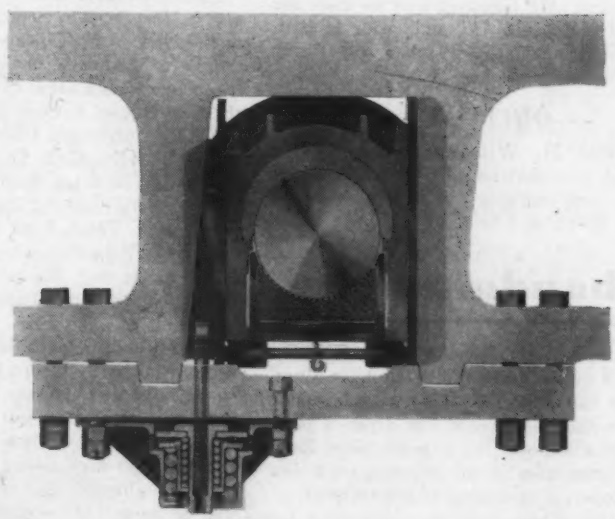
GREATER MILEAGE
Between Shoppings

Equipment that enables locomotives to run for longer periods without shop attention is doubly valuable today.

THE FRANKLIN E-2 RADIAL BUFFER greatly lessens strains on drawbars and pins, and THE FRANKLIN AUTOMATIC COMPENSATOR AND SNUBBER reduces to a minimum the wear in driving boxes and machinery parts.

The use of these devices definitely decreases locomotive maintenance and increases mileage between shoppings.





FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK • CHICAGO

In Canada: FRANKLIN RAILWAY SUPPLY COMPANY, LIMITED, MONTREAL

tion. An association has been formed between the Wilmotte Laboratory and **Jackson & Moreland,** consulting engineers.

Lynn Mahan has been appointed assistant to the president in charge of public relations of the **American Locomotive Company,** which has established a single department for the company's publicity, advertising, and sales promotion. **H. J. Downes,** who has served as the American Locomotive Company's advertising manager for many years and who recently became president of E. Mattes & Son, Inc., will act as technical adviser under the new plan. **Holmes M. Brown,** advertising manager of the Pennsylvania Rubber Company, has been appointed director of advertising and **Murray O. Smyth,** assistant advertising manager, will serve as assistant director of advertising and sales promotion. **Gordon G. Agnew, Jr.,** formerly of the New York Times and the James O. Peck Company, has been appointed assistant to Mr. Mahan.

Mr. Mahan was recently released from the Army air forces in which he served as

Lynn Mahan

a major. Before the war he was in charge of the locomotive company's information department. He formerly was an associate of Earl Newson & Co. and, prior to that, vice-president of the Thomas W. Parry Corporation, St. Louis, Mo.

OBITUARY

Charles H. Wilson, manager of the railroad sales division of Fairbanks, Morse & Co., died suddenly on September 13, in Mercy Hospital, Chicago.

Abandonments

CHICAGO, ROCK ISLAND & PACIFIC.—Division 4 of the Interstate Commerce Commission has authorized this road to abandon 17.62 miles of its main line from a point near Floris, Iowa, to a point near Paris upon completion of an alternate new line with superior operating characteristics.

READING. — Division 4 of the Interstate Commerce Commission has authorized this company and the Mine Hill & Schuylkill Haven, lessor, to abandon operation of and to abandon, respectively, a 0.29-mile segment of a branch at Richardson Junction, Pa.

Financial

ARKANSAS.—*Promissory Note.*—Division 4 of the Interstate Commerce Commission has authorized the Arkansas Railroad to issue a $28,000 4 per cent promissory note to evidence a bank loan for the purchase of ties and track materials. The division's previous conditional approval of a Reconstruction Finance Corporation loan of $36,226 (previous item in *Railway Age* of March 24, page 568) has been revoked at this road's request.

BALTIMORE & OHIO.—*Adjustment Plan Hearing.*—On September 17 the Baltimore & Ohio urged a three-judge federal court at Baltimore, Md., to approve its $500,000,000 debt adjustment plan. The company was supported by financial experts and executives of concerns holding large blocks of the roads' bonds. Preliminary objections were raised by minority security holders.

BOWDON.—*New Company.*—The Bowdon Railroad & Transportation Company, organized in 1945, has applied to the Interstate Commerce Commission for authority to acquire the properties of the Bowdon Railway, consisting principally of a 12.06-mile line from Bowdon, Ga., to Bowdon Junction, sold by order of the court.

CHESAPEAKE & OHIO.—*Acquisition.*—Division 4 of the Interstate Commerce Commission has authorized this company to purchase the properties of the Levisa River, which it controls by ownership of all outstanding stock. No cash consideration is involved, the C. & O. having advanced a total of $3,105,717 to meet the construction costs of the new line built by the subsidiary, which now will be dissolved. At the same time, the Alleghany Corporation was authorized to acquire control of the Levisa's properties through its ownership of C. & O. stock.

CHESAPEAKE & OHIO.—*Two Roads Approve Merger.*—On September 19 directors of the New York, Chicago & St. Louis and the Pere Marquette unanimously approved the plan of unification of these roads with the Chesapeake & Ohio upon the terms of exchange announced following the August meeting of the C. & O. board. The plan still has to be acted upon by the Wheeling & Lake Erie and by stockholders of the four roads. Terms have been fixed for the new preferred stock which will be offered in exchange for the preferred stocks of the Nickel Plate, Pere Marquette and Wheeling & Lake Erie. Dividends on the new stock will be payable at the rate of 3½ per cent annually before any dividends may be paid on the common stock and will be fully cumulative. It will be redeemable in whole or in part on any dividend payment date upon 30 days' notice at $105 per share, and each share of the new preferred stock will be convertible at any time at the option of the holder into 1.6 shares of C. & O. common. This fixes a conversion price of $62.50 per share of common stock.

CHICAGO, BURLINGTON & QUINCY. — *Promissory Notes.*—This company has applied to the Interstate Commerce Commission for authority to issue $3,883,440 of promissory notes in connection with its purchase from the Electro-Motive Division of General Motors Corporation, under conditional sale agreements, of 10 4,000-hp. Diesel-electric passenger locomotives at $354,600 each and 10 1,350-hp. Diesel-electric freight locomotives at $130,830 each.

CHICAGO, BURLINGTON & QUINCY. — *Trackage Agreement.*—Division 4 of the Interstate Commerce Commission has approved an arrangement under which this company will continue to operate under trackage rights on the Northern Pacific's line from Huntley, Mont., to Billings, 10.73 miles, and from Laurel, Mont., to Fromberg, 22.15 miles, and jointly with the Great Northern on the N. P. line from Billings to Laurel, 17.75 miles, as well as certain terminal facilities.

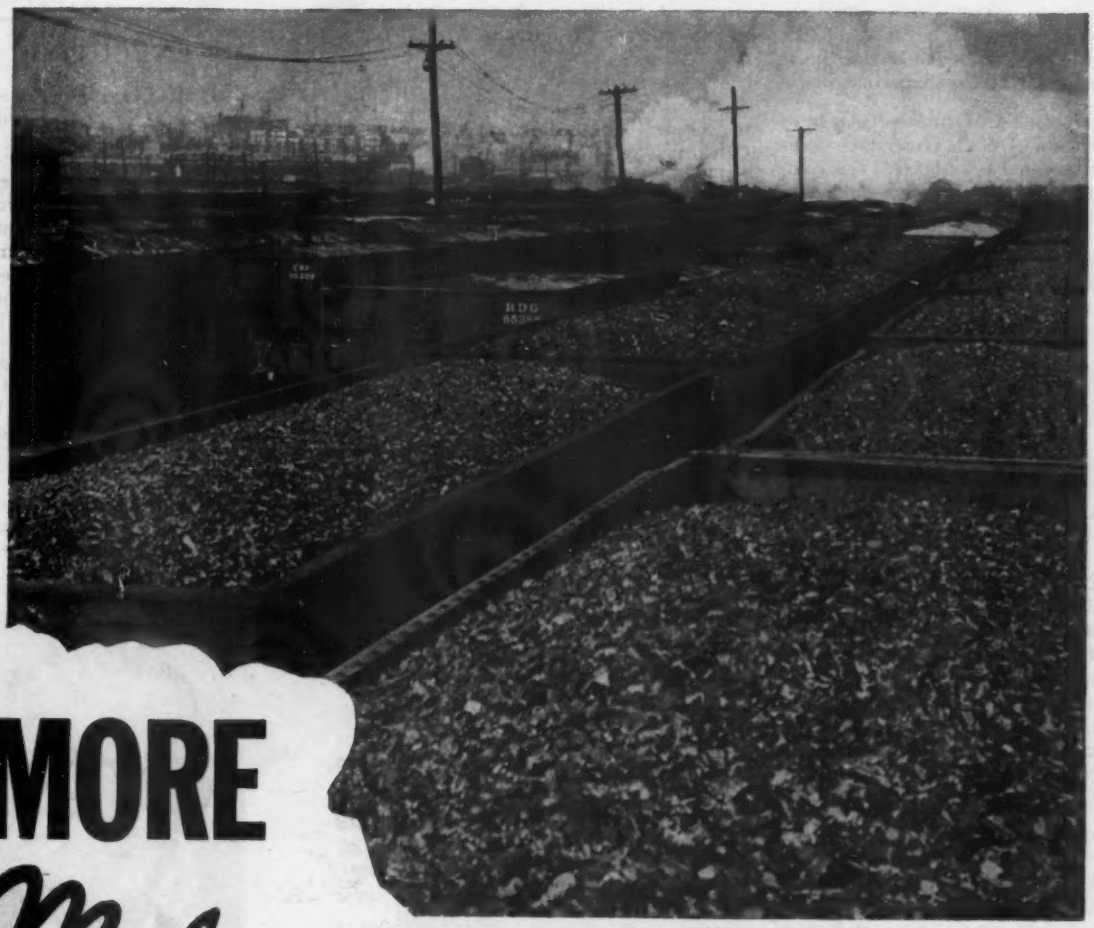
CHICAGO, ROCK ISLAND & PACIFIC. — *Promissory Notes.*—This road has applied to the Interstate Commerce Commission for authority to issue $5,200,000 of promissory notes in connection with its purchase under conditional sales agreements of the following equipment: 8 2,000-hp. Diesel-electric passenger locomotives at $175,000 each from the Electro-Motive Division of General Motors Corporation; 4 4,050-hp. Diesel-electric freight locomotives at $350,000 each from the Electro-Motive Division of General Motors Corporation; 10 4-8-4 type steam freight locomotives at $200,000 each from the American Locomotive Company; and 500 50-ton lightweight steel box cars at $3,400 each from the Pullman-Standard Car Manufacturing Company.

DENVER & RIO GRANDE WESTERN.—*Equipment Trust Certificates.*—This road has applied to the Interstate Commerce Commission for authority to assume liability for $2,610,000 of series J equipment trust certificates in connection with the acquisition of 500 50-ton box cars from the Pressed Steel Car Company at $3,813 each and three 5,400-hp. Diesel-electric locomotives from the Electro-Motive Division of General Motors Corporation at $530,000 each.

GREAT NORTHERN. — *Refunding.*—Division 4 of the Interstate Commerce Commission has authorized this company to issue $37,500,000 of series N general mortgage bonds, due in 1990, and $37,500,000 of series O, due in 2000, both bearing interest at 3⅛ per cent and both sold at 98.5679 to Halsey, Stuart & Company and others, making the average annual cost of the proceeds to the company 3.18 per cent. The proceeds and other funds are to be used to redeem $86,956,000 of outstanding bonds with higher interest rates (previous item in *Railway Age* of August 18, page 315). This transaction is expected to result in a net saving of $23,600,163 and in a reduction of $11,956,000 in outstanding indebtedness.

GREAT NORTHERN. — *Trackage Agreement.*—Division 4 of the Interstate Commerce Commission has approved an arrangement under which this company will continue to operate under joint trackage rights with the Burlington on the Northern Pacific's main line from Billings, Mont., to Laurel, 17.75 miles, and certain terminal

News Department continued on next left-hand page



MORE *Mileage* FROM EVERY TON of COAL

● Because the railroads have first to haul every ton of coal their locomotives burn, it is doubly important these days that coal be utilized most efficiently and economically.

Experience has proved that maximum production of steam from a ton of coal is secured only when the locomotive firebox is equipped with a complete brick arch.

Consequently from the standpoint of fuel cost alone, it is unprofitable to operate any locomotive without a complete arch.

HARBISON-WALKER REFRACTORIES CO.
Refractories Specialists

AMERICAN ARCH CO. INC.
60 East 42nd Street, New York 17, N. Y.
Locomotive Combustion Specialists

facilities of the N. P. at Laurel and of both the N. P. and the Burlington at Billings.

The division also has approved an arrangement under which the Great Northern will continue to operate under trackage rights over a 10.7-mile segment of the Northern Pacific's line from Tilden Junction, Minn., to Great Northern Junction.

GULF, MOBILE & OHIO.—*Promissory Notes.*—Division 4 of the Interstate Commerce Commission has authorized this company to issue $154,216 of promissory notes, sold to the Manufacturers & Traders Trust Company of Buffalo, N. Y., on a 1.69 per cent annual interest basis, in connection with the purchase from the American Locomotive Company, under a lease agreement, of two 1,000-hp. Diesel-electric road switching locomotives.

LOUISIANA MIDLAND.—*Acquisition.*—The Louisiana Midland Railway, a new company, and H. H. Holloway, its president, have applied to the Interstate Commerce Commission for authority to acquire, at a cost of $200,000, the following facilities from the Louisiana & Arkansas: (1) The line from Packton, La., to Wildsville Junction, 53.32 miles, owned by the L. & A.; (2) certain L. & A. equipment; (3) the lessee's rights to operate the Missouri Pacific line from Wildsville Junction to Concordia Junction, 14.7 miles; and (4) trackage rights over the M. P. line from Concordia Junction to Vidalia and at the Vidalia terminal, together with use of the ferry from Vidalia to Natchez, Miss.

MOORE CENTRAL.—*Capital Stock.*—The Moore Central Railroad has applied to the Interstate Commerce Commission for authority to issue $4,300 of capital stock. An application is pending before the commission for authority for this new company to purchase for this amount the properties of the Moore Central Railway, following a receivership sale.

NORTHERN PACIFIC.—*Trackage Agreement.*—Division 4 of the Interstate Commerce Commission has approved an arrangement under which this company will continue to operate under trackage rights over a line of the Great Northern from Snohomish, Wash., to Lowell, 5.2 miles.

SOUTHERN PACIFIC.—*Central Pacific Acquisition of Nevada-California-Oregon.*—Division 4 of the Interstate Commerce Commission has authorized the Central Pacific to purchase the properties of the Nevada-California-Oregon. Both companies are controlled by the Southern Pacific Company, and the transaction is to be consummated by settlements through open account at the depreciated ledger value of the properties involved. Simplification of system capital structure will result from dissolution of the Nevada company.

SOUTHERN PACIFIC.—*Ownership of Branches.*—Division 4 of the Interstate Commerce Commission has approved an inter-company transfer of ownership of certain lines in Arizona from the Southern Pacific Company to its wholly-owned subsidiary, the Arizona Eastern, in connection with a refinancing program undertaken by the Southern Pacific Railroad in which the Arizona Eastern's securities are pledged as collateral. The lines involved are: the main line from Phoenix to Tempe, 6.35 miles; Normal Junction to McQueen, 6.75 miles; McQueen to Ray Junction, 66.91 miles; Branaman to Burns, 7.33 miles; 0.16 mile at Hayden; and Creamery to Normal Junction, 1.72 miles.

The division also has authorized the Southern Pacific Railroad to purchase from the Central Pacific two branch lines in California, one from Mojave to Owenyo, 143.15 miles, and one from Laws through Owenyo to Keeler, 71.33 miles, as a step in simplifying system structure. The transaction will be completed by settlement through open account with the Southern Pacific Company, which owns all the capital stock of the owning companies.

TEXAS & PACIFIC.—*Refunding Bonds.*—This company has asked for Interstate Commerce Commission authority to issue $6,000,000 of series F 5 per cent general and refunding mortgage bonds, due in 1980, to be held in its treasury in partial replacement of $6,730,000 of series D bonds now so held but due to be cancelled in connection with this company's current refunding program.

WHEELING & LAKE ERIE.—*Awards Bonds.*—The Wheeling & Lake Erie has awarded its $6,000,000 issue of general and refunding mortgage bonds, series A, due 1992 to the Mellon Securities Corporation at 98.099 for a 2¼ per cent interest coupon. The bonds were reoffered at 98.7. (Previous item in *Railway Age* of September 1, page 390.)

Average Prices Stocks and Bonds

	Sept. 18	Last week	Last year
Average prices of 20 representative railway stocks..	55.98	55.45	40.11
Average prices of 20 representative railway bonds..	96.86	96.55	88.54

Dividends Declared

Akron, Canton & Youngstown.—5% preferred, quarterly, $2.50; and 5% preferred, accumulated, $5.00, both payable October 1 to holders of record September 15.

Mahoning Coal.—$6.25, payable October 1 to holders of record September 22.

Maine Central.—6% prior preferred, $1.50, quarterly, payable October 1 to holders of record September 24.

New London Northern.—$1.75, quarterly, payable October 1 to holders of record September 15.

Providence & Worcester.—$2.50, quarterly, payable October 1 to holders of record September 12.

Savannah & Atlanta.—5% preferred, $1.25, quarterly, payable October 1 to holders of record September 12.

Southern (Mobile & Ohio stock trust certificates).—$2.00, semi-annually, payable October 1 to holders of record September 15.

Wheeling & Lake Erie.—75¢, payable October 1 to holders of record September 25.

BLITZ LOSSES OF L. M. S.—One of the four main-line British railways, the London, Midland & Scottish, has released information on the extent of damage to its system during six years of fire and blitz, according to T. D. Slattery, general traffic manager of the British & Irish Railways in New York. More than 2,000 times, damage was inflicted to L. M. S. lines by enemy action. Tracks were blocked on 725 occasions, and major damage was done to 141 passenger stations, 54 freight houses and five power plants. Over 800 casualties to railroad personnel and passengers were reported. Listed as "destroyed or damaged" were more than 70 locomotives, 3,000 passenger cars, 8,000 freight cars and 1,000 trucks. In addition there were losses of supplies.

Railway Officers

EXECUTIVE

Cassius M. Clay, general solicitor of the Baltimore & Ohio, has resigned.

George Durham, executive vice-president and general manager of the Wheeling & Lake Erie has been elected president and general manager, with headquarters at Cleveland, Ohio. **G. E. Durham,** assistant vice-president, has been appointed assistant to president, also with headquarters at Cleveland.

Ira F. Davis, whose appointment as assistant vice-president of the Chesapeake & Ohio, with headquarters at Huntington, W. Va., was announced in the *Railway Age* of September 1, was born on October 15, 1875, at Fayetteville, W. Va. Mr. Davis has been in the service of the C. & O. since March 1, 1920, when he was employed as general manager of that road's fuel mine operations at Dorothy, W. Va. He was

Ira F. Davis

appointed chairman of the allotment commission on August 1, 1923. Prior to receiving his new appointment as assistant vice-president, Mr. Davis has been serving as engineer of coal properties.

Fred N. Reynolds, whose promotion to assistant to the vice-president and general manager of the Cleveland, Cincinnati, Chicago & St. Louis, at Indianapolis, Ind., was reported in the *Railway Age* of September 15, was born in Boone County, Iowa, on January 24, 1879, and entered railway service in 1898 as a brakeman on the Chicago & North Western, later serving on the Chicago, Rock Island & Pacific. In 1905 he went with the Panama, becoming subsequently yardmaster and trainmaster. He returned to the United States in 1910 as a trainmaster on the Chicago Great Western and, in 1911 he was promoted to superintendent. In 1913 he went with the Great Northern as general yardmaster at Great Falls, Mont., remaining at that point for six months, when he entered the employ of the Big Four as general yardmaster at Indianapolis. In 1915 he was appointed superintendent of the Indianapolis terminal

News Department continued on next left-hand page

27

new NEW YORK CENTRAL SYSTEM "Niagara"

locomotives are equipped with

AMERICAN MULTIPLE-VALVE THROTTLES

AMERICAN THROTTLE COMPANY

INCORPORATED

60 East 42nd Street, New York 17, N. Y.

122 S. Michigan Avenue, Chicago 3, Ill.

and Springfield division, with the same headquarters. He was transferred to Mattoon, Ill., in 1924, and the following year was named assistant general superintendent at Indianapolis. In July, 1933, Mr. Reynolds

Fred N. Reynolds

was promoted to general superintendent, rising to assistant general manager in 1938, the position he held at the time of his recent promotion.

FINANCIAL, LEGAL AND ACCOUNTING

Edwin T. Steffy, whose appointment as general auditor of the Western Maryland, with headquarters at Baltimore, Md., was announced in the *Railway Age* of September 1, was born on December 6, 1892, at Westminster, Md. Mr. Steffy's railroad career began with his appointment as clerk on the Western Maryland in September, 1912. In 1918 he was furloughed for service with the U. S. Army during World War I, returning to the Western Maryland in 1919 as general accountant. Promoted to assistant to general auditor in 1933, Mr. Steffy served at that post until the time of his most recent promotion to general auditor.

TRAFFIC

David Drummond, Oriental manager of the Canadian Pacific at Hong Kong, has been reported well after several years in a Japanese internment camp.

Major M. J. Loydon has returned from the Army Air Corps to resume his position as general eastern agent of the Lehigh & Hudson River at Warwick, N. Y.

R. C. Winchester has been appointed traffic manager of the Lehigh & Hudson River at Warwick, N. Y., succeeding **Howard G. Pierson,** who has retired after 56 years of service with this company. Mr. Winchester's former office of general freight agent has been abolished.

A. J. Batliner has been appointed assistant general freight agent of the Missouri Pacific Lines at Lake Charles, La., succeeding **J. M. Bryan,** who has been advanced to general agent at Winston-Salem, N. C. Mr. Bryan replaces **J. W. Bateman,** whose appointment as general agent at Houston, Tex., was reported in the *Railway Age* of May 12.

Louis J. Sickel, whose retirement as general freight agent of the Missouri Pacific at St. Louis, Mo., was reported in the *Railway Age* of September 8, was born on January 10, 1874, in St. Louis, and attended Columbia University. His entire railway career has been with Missouri Pacific and all at St. Louis, where he became a clerk in the freight accounting department in June, 1893. He became chief clerk of that department in January, 1900, transferring to the freight traffic department as chief clerk-divisions, in December, 1914. Mr. Sickel was advanced to assistant general freight agent on February 1, 1923, and to general freight agent on February 1, 1937, remaining in the latter position until his retirement.

Charles L. Fuller, whose promotion to assistant traffic manager of the Minneapolis & St. Louis, at Minneapolis, Minn., was reported in the *Railway Age* of September 8, was born at Oskaloosa, Iowa, on March 24, 1905, and was educated in the

Courtesy Gene Garrett

Charles L. Fuller

public schools of that city. He entered railway service as a stenographer with the Minneapolis & St. Louis, at Minneapolis, in September, 1925, later serving in that capacity at Des Moines, Iowa. In December, 1927, he was advanced to traffic agent at Des Moines, and six months later he was promoted to traveling agent at Cincinnati, Ohio. In February, 1935, he went to Indianapolis, Ind., as general agent, being transferred to Minneapolis in August, 1936. Mr. Fuller was promoted to assistant general freight agent, at that city, in April, 1938, holding that position until his recent appointment.

Lloyd W. Baker, whose appointment as general freight agent of the Baltimore & Ohio, with headquarters at Baltimore, Md., was announced in the *Railway Age* of September 8, was born at Mt. Airy, Md., on October 17, 1905, receiving his LL.B. from the University of Baltimore in 1935. Mr. Baker entered railroad service on August 7, 1923, as a clerk in the service of the Baltimore & Ohio, at Baltimore. Remaining at Baltimore, he served the B. & O. successively as stenographer, secretary to general freight agent, secretary to assistant to vice-president, secretary to vice-president, and clerk. He was appointed industrial agent at Cincinnati, Ohio, on January 1, 1937, and on April 16, 1939, was promoted to division freight agent at Indianapolis, Ind., being transferred to Dayton, Ohio, on January 1,

Courtesy Bachrach

Lloyd W. Baker

1941. Promoted to the office of assistant general freight agent at Cincinnati in September, 1943, Mr. Baker remained in that position until his most recent appointment to general freight agent, Eastern lines, with headquarters at Baltimore. Mr. Baker is a member of the Maryland Bar Association.

John Gleave, chief clerk to traffic manager, foreign freight department of the Canadian National, has been appointed assistant foreign freight agent with headquarters as before at Montreal, P. Q., and **G. M. Douglas,** chief rate clerk in the rate and tariff bureau, has been appointed assistant foreign freight agent in charge of export and import rates, also with headquarters at Montreal.

William E. Stewart, freight traffic manager of the Central of Georgia, has been promoted to general freight traffic manager, with headquarters as before at Savannah, Ga. He is succeeded in his former position by **Charles D. Chancellor,** formerly assistant freight traffic manager at Savannah. **Allen W. Sanders,** general freight agent at Savannah, and **Mark W. Thomas** have both been appointed assistant freight traffic managers, with headquarters at Savannah, while **Edward J. McCaffrey,** assistant general freight agent, succeeds Mr. Sanders as general freight agent, with headquarters as before at Savannah; and **Kendrick R. Bragg,** commerce agent, has been appointed to Mr. McCaffrey's former position of assistant general freight agent, also with headquarters as before at Savannah.

Headquarters of the traffic department of the Erie at Cleveland has announced the promotion of the following to new posts with the road:

In the freight sales and service department, **J. T. McEntee,** general eastern freight agent at New York, becomes assistant freight traffic manager there, succeeding **G. R. Wheeler,** who has retired after 55 years of service. **B. F. Conway,** general New England agent, Boston, Mass., has been appointed assistant general freight agent at Buffalo, N. Y., succeeding **G. W. Madsen,** whose transfer to Chicago, suc-

News Department continued on second left-hand page

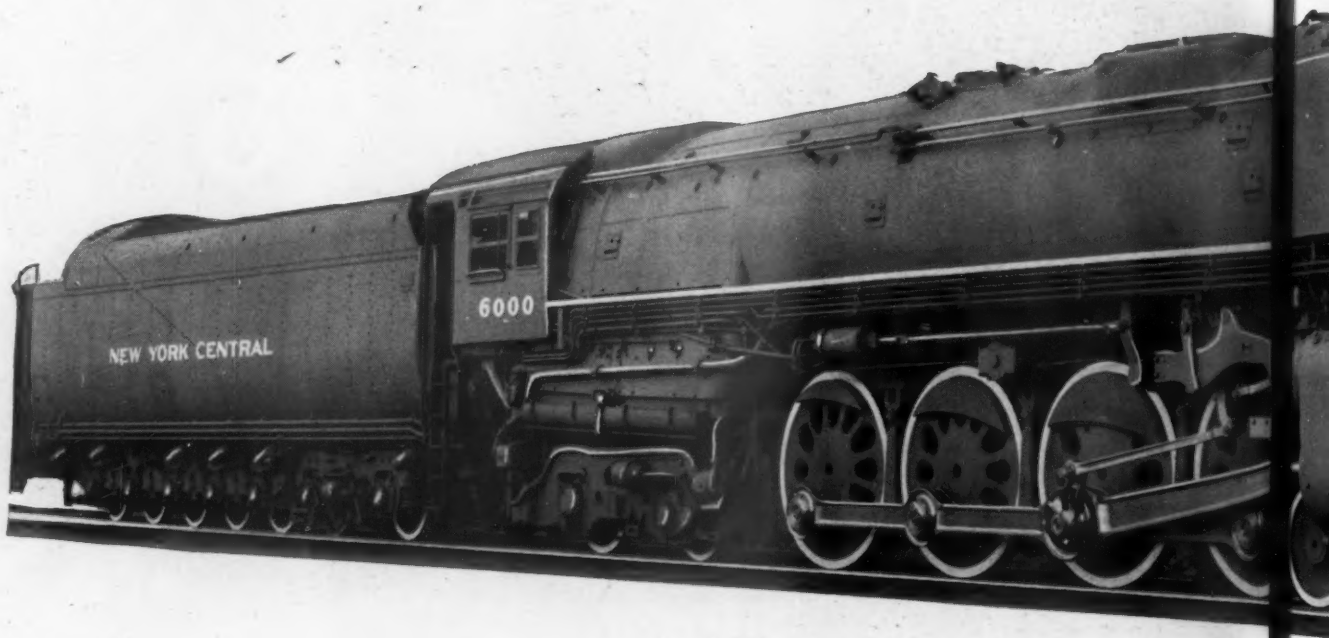
NEW YORK CENTRAL SYSTEM'S

New Niagara Class

DUAL-PURPOSE LOCOMOTIVE

Built by American Locomotive Company to meet today's demands for faster, heavier and more dependable passenger and freight service.

In all respects, these locomotives will steam power ever before used by the



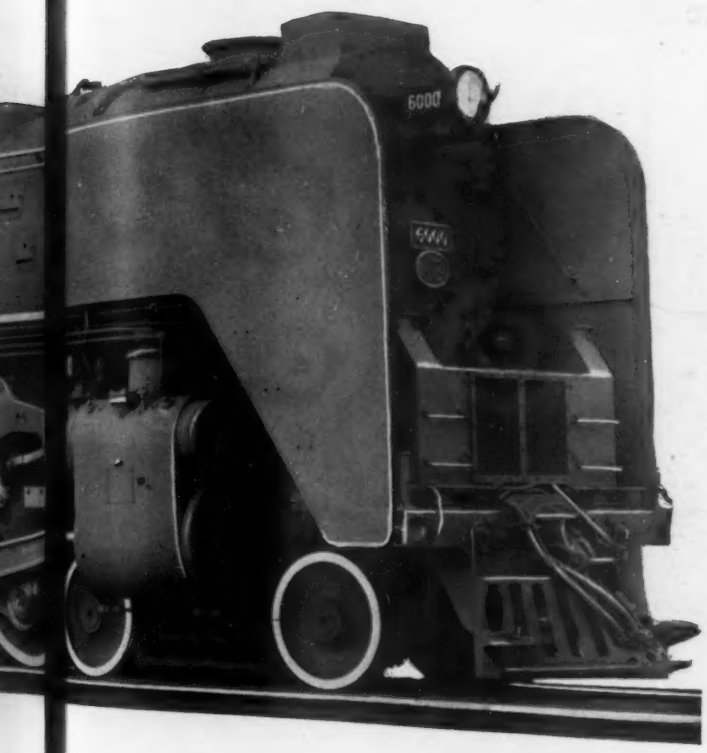
FROM 1837 to 1945 — ever since the SANDUSKY was built for the Mad River & Lake Erie — continuous cooperation between builder and railroad has produced for the New York Central System better and better locomotives: the PACIFIC type, the HUDSON type, the MOHAWK type . . . and now the great new NIAGARA!

Designed to pull either passenger liners or heavy freight trains, interchangeably, at high speeds, the NIAGARA locomotive opens a new door to many economies — lower motive-power investment, reduced maintenance, more flexibility, higher operating efficiency, and greater availability.

Development of any locomotive, for any railroad, is a cooperative job between the builder and the railroad. More than 5,000 locomotives have been built by American Locomotive Company for the New York Central System since 1901.

provide motive power surpassing all

New York Central System



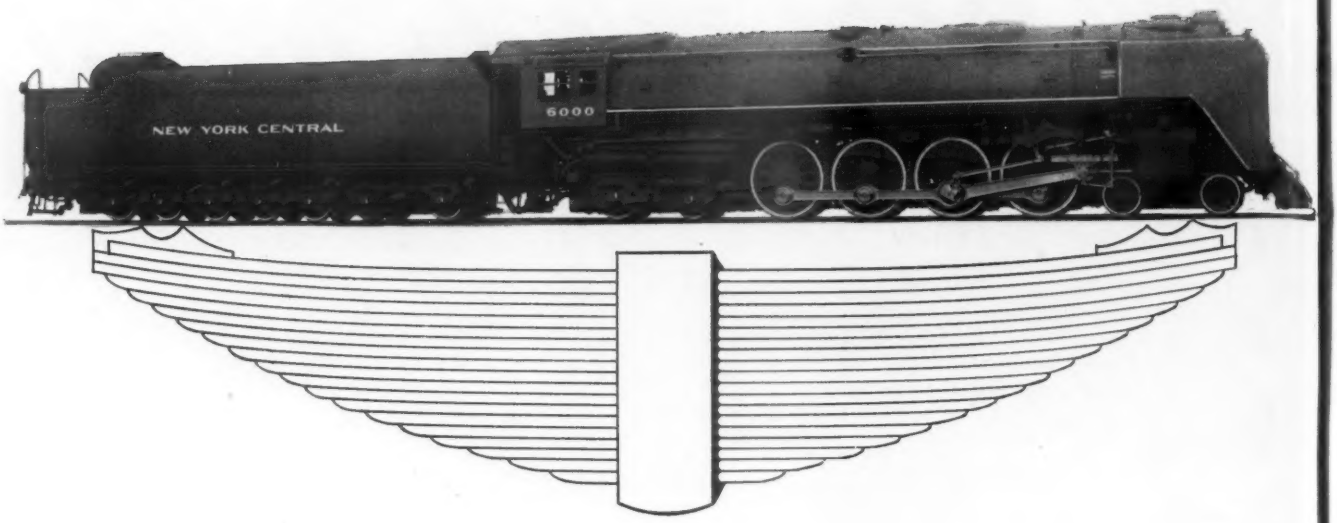
SPECIFICATIONS:

Weight on Drivers	275,000 lbs.
Weight of Engine	471,000 lbs.
Cylinders	25 x 32 ins.
Diameter of Drivers	79 ins.
Boiler Pressure	290 lbs.
Tractive Power	62,500 lbs.
Capacity (Water)	18,000 gals.
Capacity (Fuel)	46 Tons

American Locomotive

Alco

THE MARK OF MODERN LOCOMOTION



"RAILWAY" SPRINGS FOR THE NIAGARA

NEW and difficult problems in spring design and construction are an inseparable part of building better locomotives, or railway rolling stock of any kind.

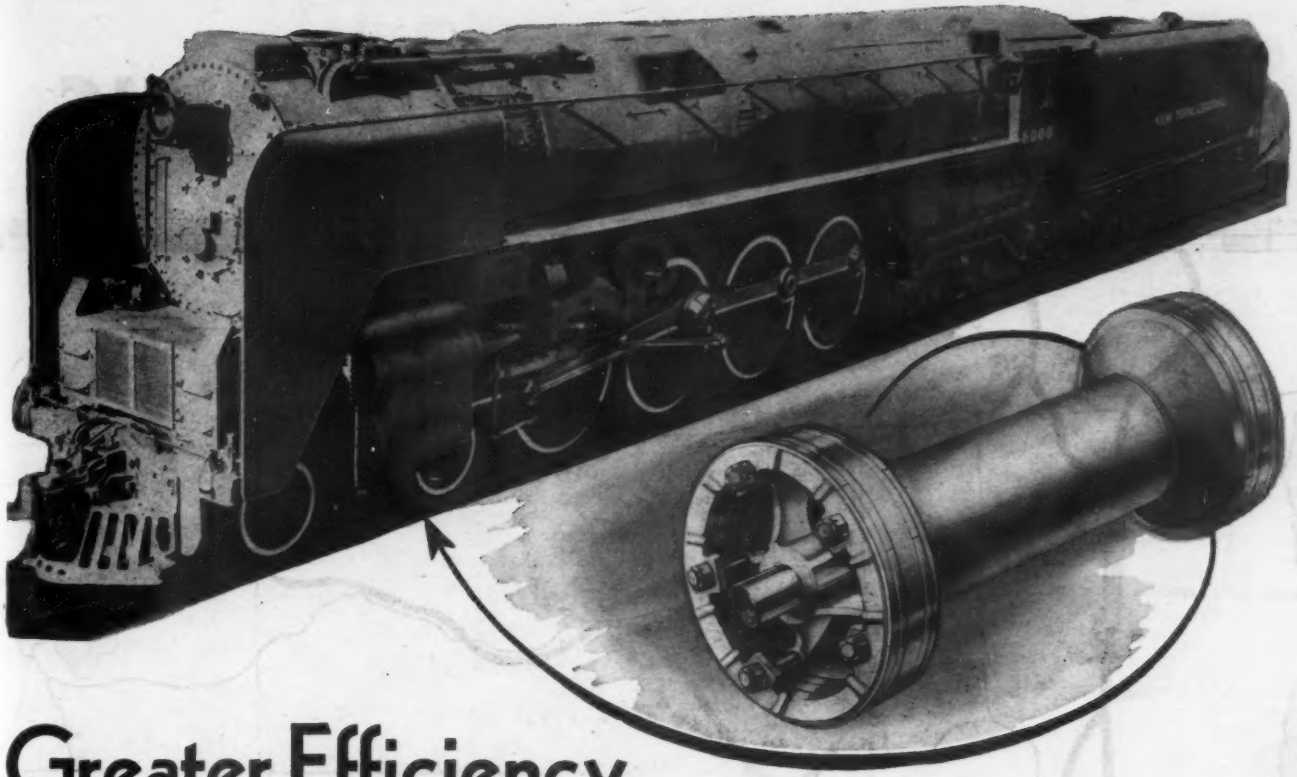
The Railway Steel-Spring Division of American Locomotive Company is organized to take in stride any railway-spring problem—such as its recent assignment to produce springs for the most powerful steam locomotives ever built for New York Central System.

This service is available to all who require any type of railway spring for any application.

American Locomotive

Alco

RAILWAY STEEL-SPRING DIVISION



Greater Efficiency Lower Maintenance for New York Central's New Niagaras . . . .

TWIN objectives governing the planning of these new locomotives were highest efficiency and lower maintenance of both track and equipment. HUNT-SPILLER Light Weight Piston Valves and Duplex (iron and bronze) Sectional Valve Rings were therefore a logical choice, for these components of advanced design augment the proven advantages of lighter reciprocating parts.

Further contributions to the Niagaras' superior performance include HUNT-SPILLER High Test Steel Pistons with flame-hardened ring grooves, and HUNT-SPILLER GUN IRON cylinder bushings, valve bushings, and valve bull rings.

HUNT-SPILLER LIGHT WEIGHT VALVES AND DUPLEX SECTIONAL VALVE RINGS

HUNT-SPILLER MFG. CORPORATION

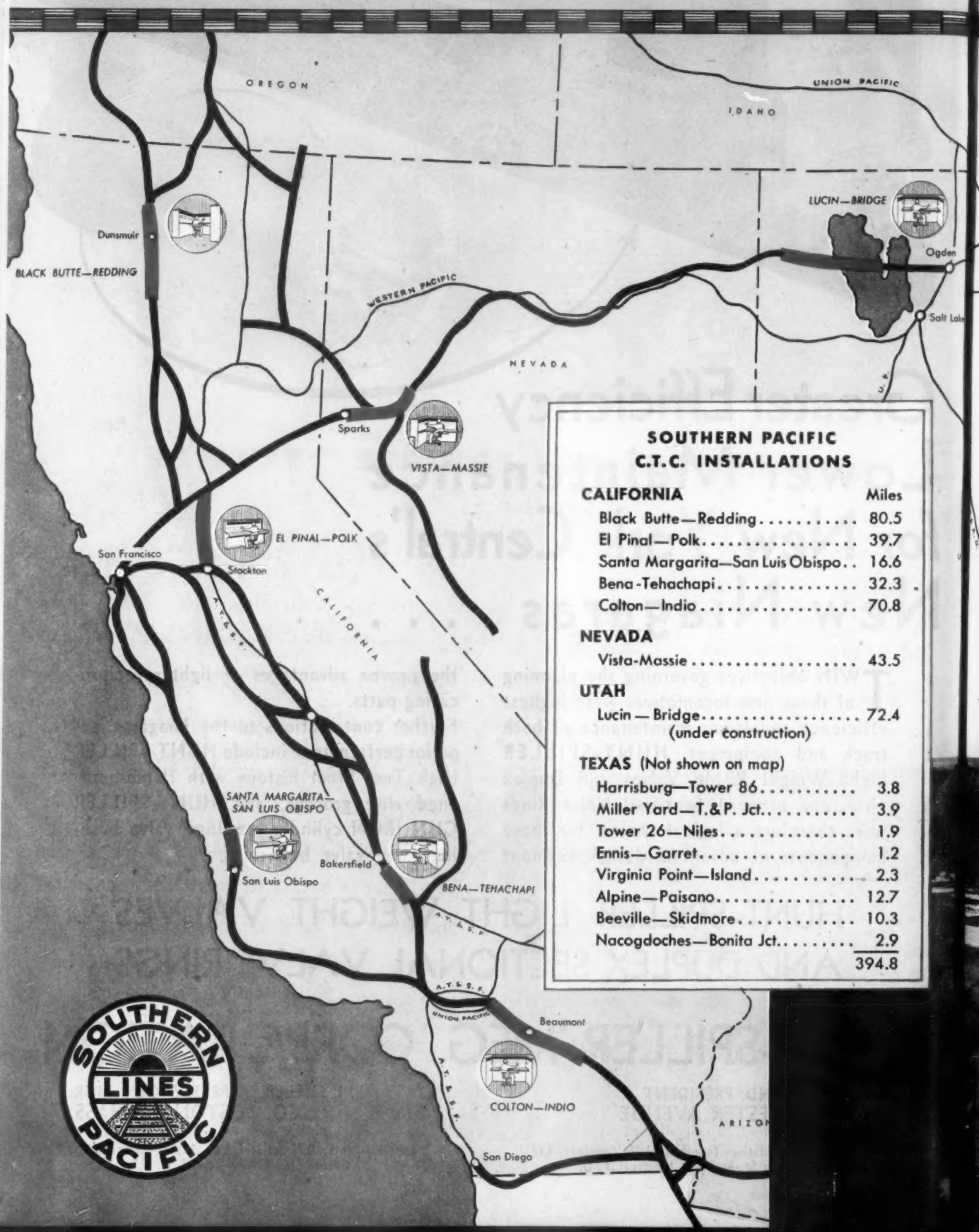
N. C. RAYMOND, PRESIDENT
383 DORCHESTER AVENUE

E. J. FULLER, V. PRES. & GEN. MGR.
SO. BOSTON 27, MASS.

Canadian Representative: Joseph Robb & Company, Ltd., 5575 Cote St. Paul Rd., Montreal, P. Q.

Export Agents: International Rwy. Supply Company, 30 Church Street, New York 7, N. Y.

ON THE SOUTHERN PACIFIC

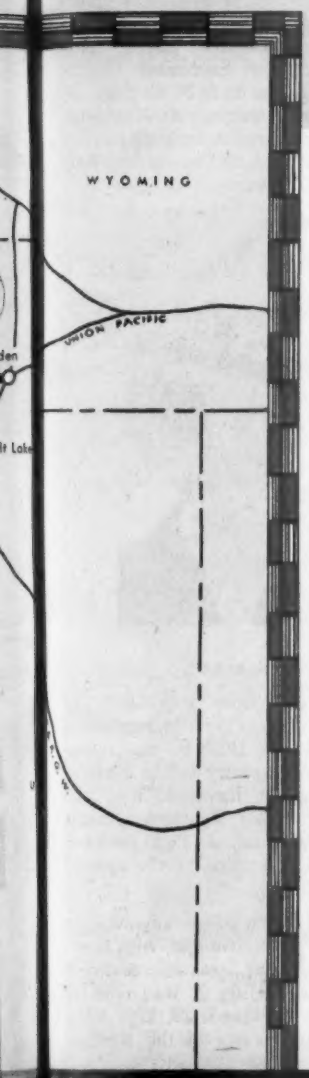


SOUTHERN PACIFIC C.T.C. INSTALLATIONS

	Miles
CALIFORNIA	
Black Butte—Redding	80.5
El Pinal—Polk	39.7
Santa Margarita—San Luis Obispo	16.6
Bena-Tehachapi	32.3
Colton—Indio	70.8
NEVADA	
Vista-Massie	43.5
UTAH	
Lucin—Bridge (under construction)	72.4
TEXAS (Not shown on map)	
Harrisburg—Tower 86	3.8
Miller Yard—T.&P. Jct.	3.9
Tower 26—Niles	1.9
Ennis—Garret	1.2
Virginia Point—Island	2.3
Alpine—Paisano	12.7
Beeville—Skidmore	10.3
Nacogdoches—Bonita Jct.	2.9
	394.8

peak traffic *moves smoothly*

with "UNION" C.T.C.



The Southern Pacific is one of the most consistent users of Centralized Traffic Control. Beginning with an installation between Stockton, Calif. and Brighton, (El Pinal—Polk), in 1930, C.T.C. has been steadily extended until today 15 installations covering 394.8 miles of road are in service or under construction.

The installations made since 1941 have been on strategic sections of single track, where C.T.C. was needed to facilitate handling of the heavy traffic imposed by the war.

With C.T.C., the railroad finds, 60 per cent to 80 per cent of the delays caused by meets are eliminated, and a large percentage of meets are made without stopping.

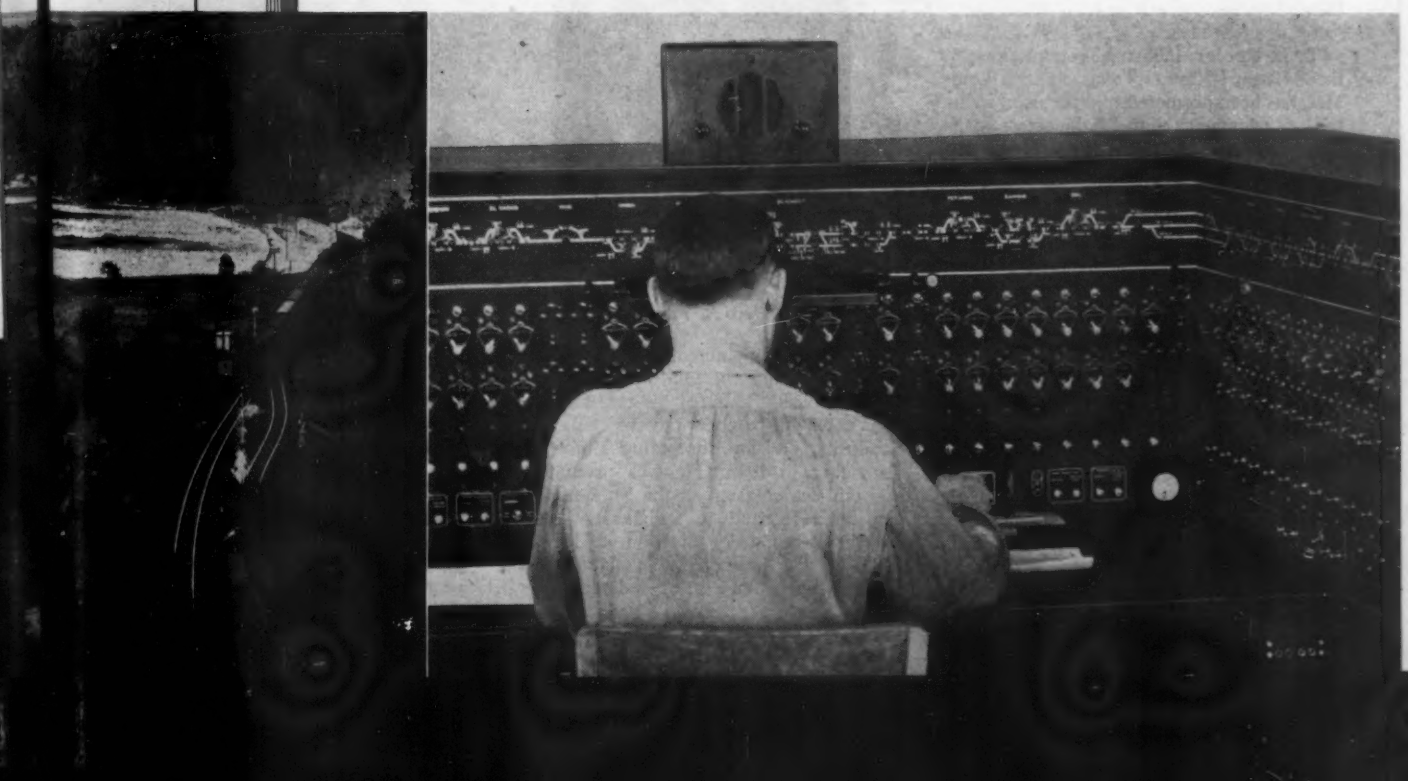
Over one mountain district, where multiple engine trains are operated on grades as high as 2.3 per cent, as many as *90 movements per day* have been handled without difficulty. In this and other helper territories, C.T.C. has proved particularly valuable in the return of helper engines.

Our nearest district office will be glad to cooperate with you in determining how and where you can use "Union" C.T.C. profitably.

UNION SWITCH & SIGNAL COMPANY

Swissvale, Pennsylvania

NEW YORK · CHICAGO · ST. LOUIS · SAN FRANCISCO



ceeding **C. V. Harrow** was noted in the September 15 issue of *Railway Age* along with Mr. Harrow's appointment as general eastern agent at New York, succeeding Mr. McEntee. **A. M. Monahan,** general agent at Boston, becomes general New England agent there, replacing Mr. Conway; and **D. S. Day,** traffic assistant in the research department at Cleveland, Ohio, goes to Boston as general agent to fill the post left vacant by Mr. Monahan. **L. E. Newman,** general agent, Minneapolis, Minn., has been appointed foreign freight agent at Chicago, succeeding **A. E. Peterson,** who has retired as noted in the June 2 *Railway Age*. **C. A. Stoeber,** assistant general eastern freight agent at New York, has been appointed to the newly created position of assistant foreign freight traffic manager at New York. **J. W. Cloud,** general agent at Peoria, Wis., has been transferred to Minneapolis, replacing Mr. Newman, and **H. A. Wilson,** general agent at Philadelphia, becomes assistant general eastern freight agent at New York in place of Mr. Stoeber. **C. F. Whadcook,** division freight agent at Elmira, N. Y., has been appointed general agent at Philadelphia, succeeding Mr. Wilson, and **E. W. Keiley,** general agent at Dallas, Tex., has been sent to Elmira to succeed Mr. Whadcook as division freight agent. **L. J. Marion,** general agent at Albany, N. Y., has been transferred to San Francisco, Cal., to take the place of **J. A. Lloyd,** who has retired, and **J. E. Campbell,** commercial agent at Boston, becomes general agent at Albany, succeeding Mr. Marion. **H. W. Gray,** commercial agent at Chicago, has been appointed division freight agent at Marion, Ohio, replacing **A. R. Tennis,** who has retired.

In the passenger traffic department, **Alfred Fynn,** assistant general passenger agent at Cleveland, has been appointed general passenger agent there. **R. E. Towns,** division passenger agent at Buffalo, becomes assistant general passenger agent at Youngstown, Ohio, succeeding **T. R. Patton,** who has retired, while **G. W. Krom,** city passenger agent at New York, has been appointed to succeed Mr. Town as division passenger agent at Buffalo.

T. L. Peeler, industrial commissioner of the Missouri-Kansas-Texas at St. Louis, Mo., has been promoted to director of industrial development, with headquarters at St. Louis and also at Dallas, Tex. **R. G. Buford,** assistant manager of industrial development, has been advanced to assistant director of industrial development, with headquarters as before at Dallas, and **L. E. O'Leary** has been appointed assistant director of industrial development, with headquarters at St. Louis. **George R. Reeder,** assistant general freight agent who has been serving in the armed forces since 1943, has returned to the M-K-T and has been promoted to general freight agent in charge of solicitation, with headquarters at Dallas. **W. P. Lacy,** division freight agent at Kansas City, Mo., who has also been on leave of absence to serve with the armed forces and has been honorably discharged, has been advanced to division freight and passenger agent, with headquarters at Waco, Tex.

OPERATING

Harold J. Nichols, whose appointment as superintendent of telegraph of the Rutland, with headquarters at Rutland, Vt., was announced in the *Railway Age* of July 7, was born on December 24, 1896, at Platts-

PhotoReflex Studio, L. S. Ayres & Co.

Harold J. Nichols

burg, N. Y. Mr. Nichols' railroad career was started with his appointment on March 21, 1916, as a telegraph operator in the service of the Rutland. He became train dispatcher on February 9, 1920, and chief dispatcher on October 11, 1943, the position he was holding at the time of his recent promotion to superintendent of telegraph.

Dwight A. Fawcett, whose promotion to assistant general manager of the Cleveland, Cincinnati, Chicago & St. Louis, at Indianapolis, Ind., was reported in the *Railway Age* of September 15, was born at Rushsylvania, Ohio, and entered railway service on the Big Four at that point in

Dwight A. Fawcett

1908. He was appointed telegraph operator at Harper, Ohio, the following year, and in 1913, he was promoted to car distributor and extra dispatcher on the Cincinnati-Sandusky division, becoming night chief dispatcher in 1913. He was promoted to assistant trainmaster on the St. Louis division in 1918, and to trainmaster on the Cincinnati-Sandusky division in 1923. In 1936, he was promoted to assistant to the general superintendent, at Indianapolis. In 1939, he was named assistant superintendent of the Ohio division at Springfield, Ohio, becoming superintendent in 1943. On January 1, 1944, Mr. Fawcett was further advanced to assistant to the general manager at Cincinnati, the position he held at the time of his recent promotion.

E. C. Sparks, whose promotion to superintendent of the Eastern Kentucky division of the Louisville & Nashville was reported in the *Railway Age* of September 15, entered the employ of the L. & N. on June 10, 1902, as a telegraph operator at Nashville, Tenn. He was promoted to train dispatcher on the O. & N. division, at Owensboro, Ky.,

E. C. Sparks

in March, 1905, and three years later he was further advanced to chief dispatcher at that point. In March, 1918, he was transferred in the same capacity to the Eastern Kentucky division, at Ravenna, Ky., and on October 20, 1928, Mr. Sparks was made assistant superintendent of that division, the position he was holding at the time of his recent promotion.

William E. Lovett, whose appointment as superintendent of the Rutland, with headquarters at Rutland, Vt., was announced in the *Railway Age* of July 7, was born at East Dorset, Vt., on March 25, 1897. Mr. Lovett entered the service of the Rutland

William E. Lovett

as assistant agent at Arlington, Vt., in February, 1913, being promoted to telegraph operator at Manchester, Vt., one year later. Transferring to train service

in December, 1916, he became brakeman, but re-entered telegraph service at Rutland in August of the following year, becoming train dispatcher in February, 1918. Promoted to night chief train dispatcher on December 1, 1929, Mr. Lovett was subsequently promoted to chief train dispatcher and to trainmaster, in April, 1941, and October, 1943, respectively. He had been maintaining the latter position when he was recently appointed superintendent.

E. T. Parker, assistant trainmaster on the Illinois Central, has been promoted to trainmaster, with headquarters at Fort Dodge, Ia., succeeding **N. P. Mills,** who is retiring on September 30, after more than 50 years of service.

Omer A. Boivin, whose appointment as superintendent of transportation, Quebec district of the Canadian National, with headquarters at Quebec, P. Q., was announced in the *Railway Age* of September 8, was born at Montreal, P. Q., on March 5, 1899. Mr. Boivin commenced his railroad career as junior clerk in the office of the freight claims agent of the C. N. R. at Montreal on July 24, 1912, becoming clerk in that department two years later. Transferring to the transportation department, also at Montreal, in November, 1916, he became a brakeman, serving subsequently as operator and agent, supervisor of traffic, and night dispatcher, successively, becoming assistant superintendent on October 1, 1939. Mr. Boivin was promoted to transportation assistant, Montreal district, on July 14, 1943, the post he has now relinquished to take up the duties of his new position as superintendent of transportation.

Omer A. Boivin

ENGINEERING & SIGNALING

Edwin F. Wright, whose appointment as regional engineer of the Baltimore & Ohio at Pittsburgh, Pa., was announced in the *Railway Age* of August 25, was born on March 5, 1901, at Baltimore, Md. Graduating from the Baltimore Polytechnic Institute in 1920, Mr. Wright attended Cornell University from 1920 to 1922. He entered railroad service as a rodman on the B. & O. in April, 1923, and advanced through the grades of levelman, transitman, and field engineer to the post of assistant engineer, with headquarters at Pittsburgh, the position he was holding at the time of his most recent appointment to the office of regional engineer. Mr. Wright has been connected with the Pittsburgh office of the B. & O.'s engineering department since February, 1924, with the exception of the period from 1933 to 1936 when he was employed on extensive grade crossing elimination projects on Staten Island, N. Y.

Edwin F. Wright

E. R. Shultz, engineer maintenance of way of the Northwestern district of the Pennsylvania, with headquarters at Chicago, has been promoted to chief engineer, maintenance of way of the Eastern region, with headquarters at Philadelphia, Pa., succeeding **Walter R. Parvin,** whose death on July 28 was reported in the *Railway Age* of August 4, and **M. C. Bitner,** division engineer of the New York division at Jersey City, N. J., has been advanced to engineer maintenance of way, Northwestern district, at Chicago, replacing Mr. Shultz. **J. M. Fox,** engineer maintenance of way of the Eastern Pennsylvania general division, with headquarters at Harrisburg, Pa., has been promoted to assistant to the chief engineer, Eastern region, with headquarters at Philadelphia, a newly created position, and **H. J. Kerstetter,** division engineer at Philadelphia, has been advanced to engineer maintenance of way of the Eastern Pennsylvania division, relieving Mr. Fox. **K. J. Silvey,** division engineer of the Columbus division at Columbus, Ohio, has been transferred to the New York division, at Jersey City, succeeding Mr. Bitner, and **T. M. Goodfellow,** assistant division engineer of the Philadelphia Terminal division, has been promoted to division engineer at Columbus, replacing Mr. Silvey.

MECHANICAL

R. C. Sorenson has been appointed electrical engineer of the Northern Pacific, with headquarters at St. Paul, Minn., succeeding **F. W. Reed,** who has retired.

Ormond R. Pendy, whose appointment to assistant chief mechanical officer of the New York, Chicago & St. Louis at Cleveland, Ohio, was announced in the *Railway Age* of July 7, was born in Oil City, Pa., on December 17, 1900, and was graduated from Pennsylvania State College in 1924, entering railroad service in that year as a special apprentice on the N. Y., C. & St. L. In 1927 he became dynamometer car operator and from 1929 to 1931 served as a machinist and gang leader at Conneaut, Ohio, becoming mechanical inspector for the superintendent of motive power at Cleveland in the latter year. Appointed fuel supervisor in 1933, Mr. Pendy remained in that position until December, 1936, when he became general roundhouse foreman at Conneaut, the position he was holding at the time of his recent promotion to assistant chief mechanical officer.

Ormond R. Pendy

OBITUARY

Frederic D. McCarthy, assistant general counsel of the Northern Pacific with headquarters at St. Paul, Minn., died in that city on September 18.

Arthur Tipton Stewart, special representative of the Missouri Pacific, with headquarters at St. Louis, Mo., died of a heart attack, at Galveston, Tex., recently. Mr. Stewart, who was 73, had served the Missouri Pacific in its oil traffic department for many years and recently was employed in the publicity department as special representative. In the latter capacity, he spoke before civic clubs and business organizations in practically every city served by the Missouri Pacific.

John L. Umshler, superintendent of the Peoria & Pekin Union, whose death on September 5 was reported in the *Railway Age* of September 15, was born on November 25, 1896, and entered railway service on March 1, 1907, as a caller and yard clerk of the Union Pacific at Green River, Wyo. A short time later he was transferred to Cheyenne, Wyo., and then went with the Southern Pacific as a yard clerk at Ogden, Utah, subsequently serving in that capacity at Green River. After working for the Southern Pacific for some time Mr. Umshler became a switchman of the Illinois Central at Centralia, Ill., and was subsequently promoted to yardmaster, general yardmaster, traveling general yardmaster and trainmaster, with headquarters at various points of the road including Chicago; Memphis, Tenn., Vicksburg, Miss., Dubuque, Iowa, and East St. Louis, Ill. Mr. Umshler then resigned to become a trainmaster of the Missouri Pacific, with headquarters at Little Rock, Ark., and on November 25, 1929, he was appointed to the position he held at the time of his death.

HOLLOW
Flexible
STAYBOLTS
on
New York Central's
New NIAGARA
FLANNERY BOLT COMPANY
BRIDGEVILLE
PENNSYLVANIA

NY LOCOMOTIVE BRAKE EQUIPMENT

Provides an OPERATING CONTROL of EXCEPTIONAL FLEXIBILITY

THE "Niagara", New York Central's most powerful steam locomotive built for high speed freight and passenger service, is equipped with the No. 8-ET New York Air Brake Equipment.

This modern form of brake, which provides an operating control of exceptional flexibility, is a major factor enabling these dual purpose locomotives to deliver unusual, efficient, and economical service over a wide range of operating conditions.

Performance records of locomotives equipped with this up-to-date locomotive and tender brake show that modern passenger and fast freight trains can be handled smoothly and satisfactorily.

Continued and essential progress in speed, safety, reliability and economy of rail transportation can be accelerated by the general application of modern brakes to all rolling stock.

The New York Air Brake Company

420 Lexington Ave., New York 17, N.Y. Plant: Watertown, N.Y.

STANDARD STOKER *Fired*

NEW YORK CENTRAL'S NIAGARA CLASS 6000 H. P. DUAL PASSENGER AND FREIGHT LOCOMOTIVE

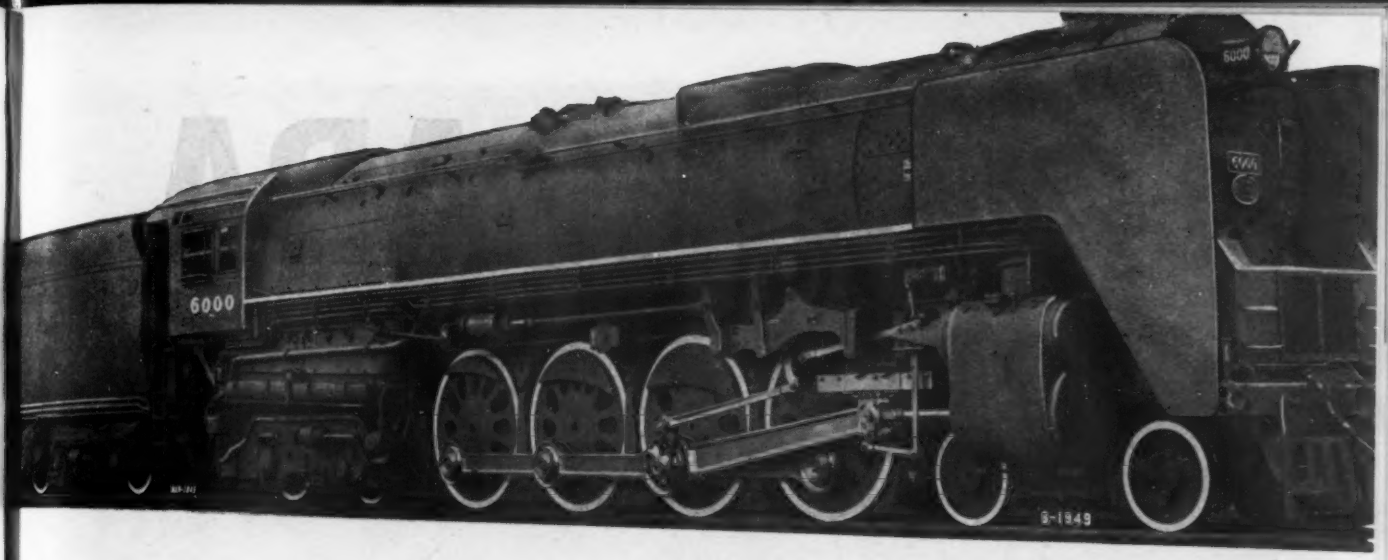
Equipped with STANDARD HT STOKER

THE NIAGARA, first of a number of dual-purpose locomotives to be built for the New York Central, is designed to handle effectively fast passenger trains and also to meet the demands for high speed freight service. This modern locomotive embodies notable advances in reciprocating steam locomotive design providing increased power, economy, efficiency and utilization.

Standard HT Stokers will handle the all-important firing job on the entire fleet of Niagara locomotives thus assuring dependable operation and maximum firing efficiency so essential in producing sustained tractive effort.

THE STANDARD STOKER COMPANY, INC
NEW YORK • CHICAGO • ERIE • MONTREAL

556
REG. U. S. PAT. OFFICE



VANADIUM STEEL FORGINGS

NEW YORK CENTRAL "NIAGARA"
High Powered, High Speed Locomotive

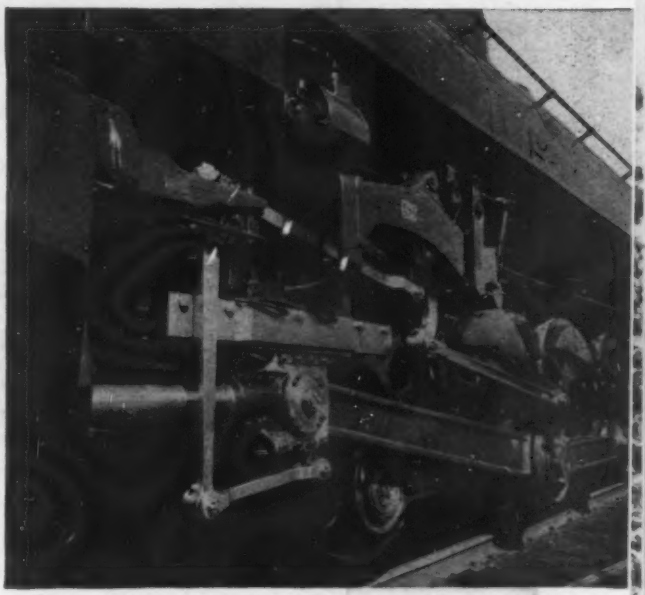
The 235-ton *Niagara*, New York Central's newest and largest locomotive, designed for handling both freight and passenger loads, is an outstanding tribute to advanced design—the result of combined engineering skills of railroad, equipment builder and material suppliers.

Drawing on a wealth of accumulated experience and performance records, New York Central specified high strength, normalized and tempered Manganese-Vanadium steel be used in the Timken roller bearing type main and side rods and Carbon-Vanadium steel in the roller bearing axles and other parts in the building of the *Niagara* at the Schenectady shops of the American Locomotive Company.

The exceptional properties of these vanadium steels are shown in the accompanying table. These properties were obtained by a normalizing and tempering heat treatment in conformance with requirements of the Association of American Railroads and the New York Central specifications. As a result, these important forgings, even with their high strength, have a minimum of sensitivity to thermal and mechanical abuse.

These properties also indicate why these practical vanadium steels, which combine high strength, exceptional ductility and *toughness*, excellent machinability and high resistance to fatigue, were the logical choice for this modern locomotive.

Here again is testimony that "Alloy Steels can do many jobs better!"



Close-up photo shows parts forged of Vanadium Steels

TABLE OF PROPERTIES:

Average results of tests on Vanadium Steels used in the Niagara

MANGANESE-VANADIUM STEEL

Physical Properties	Main Rods	Side Rods
Y.P. lbs. sq. in.	74,500	81,700
Tensile Strength	99,000	105,500
Elong. % in 2"	28.0	26.5
Red. Area %	59.0	60.5

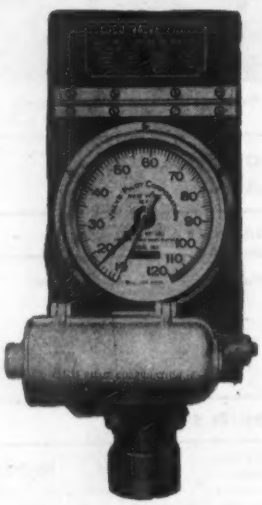
CARBON-VANADIUM STEEL

Physical Properties	Driving Axles	Engine Truck Axles	Trailer Axles	Equalizers
Y. P. lbs. sq. in.	62,900	65,000	64,300	70,500
Tensile Strength	100,100	100,600	99,580	103,000
Elong. % in 2"	25.3	26.0	26.2	26.0
Red. Area %	43.7	48.2	48.8	49.1

VANADIUM CORPORATION OF AMERICA

420 LEXINGTON AVENUE, NEW YORK 17, N. Y. • DETROIT • CHICAGO • CLEVELAND • PITTSBURGH

The NIAGARA



ON THE New York Central, No. 6000, the first "Niagara," outdoes her predecessors in long, fast, daily service.

Recorded by the Valve Pilot, her performance demonstrates the power, availability and economy of modern steam locomotives.

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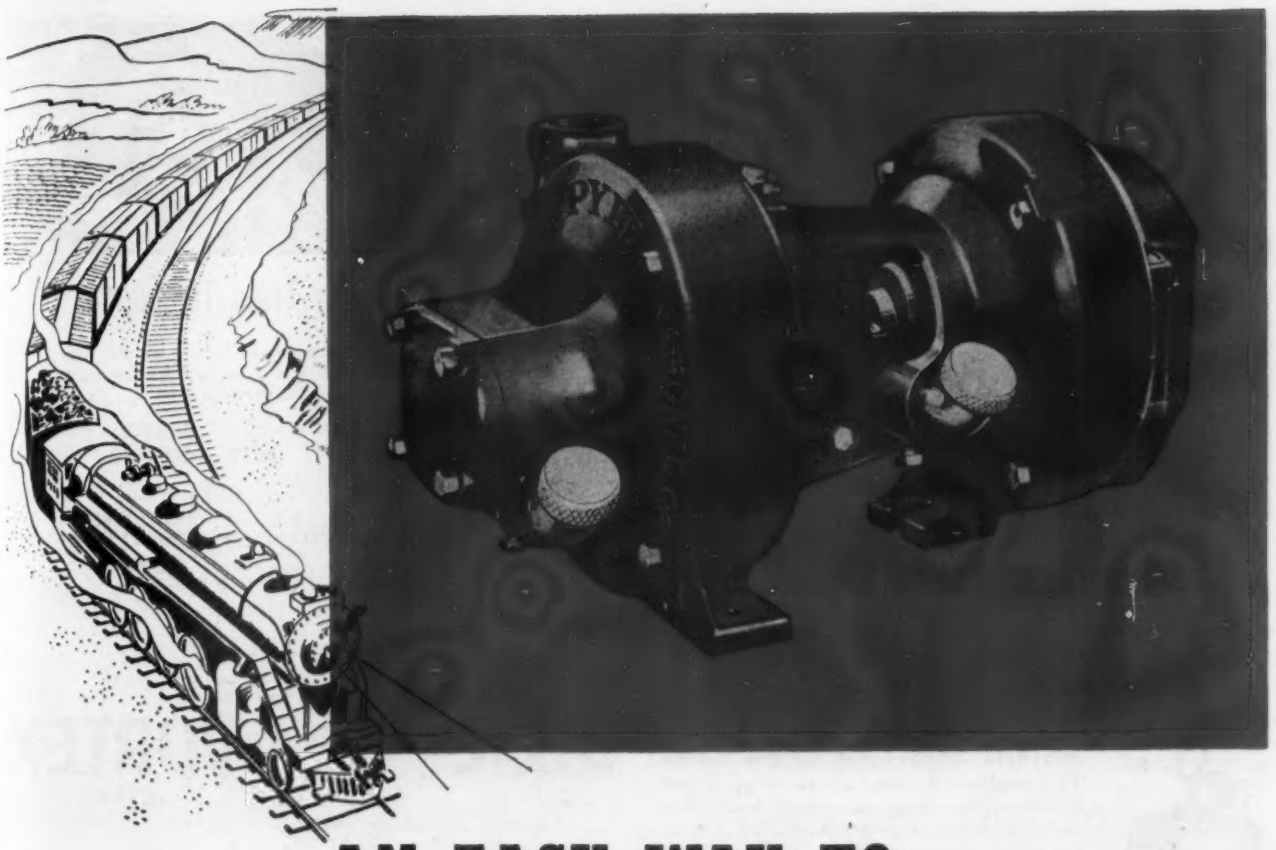

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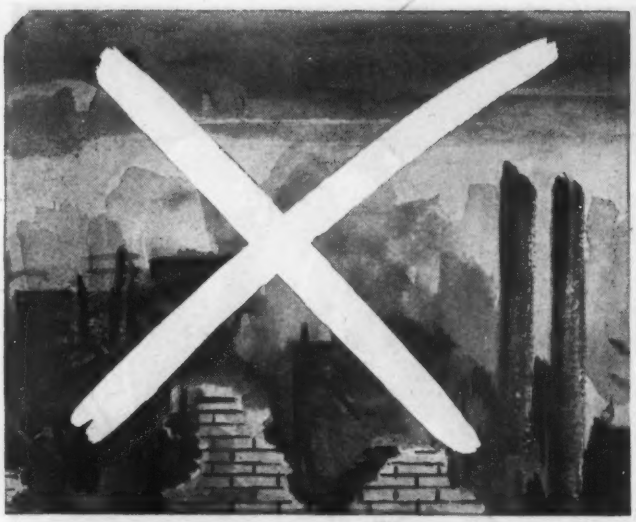

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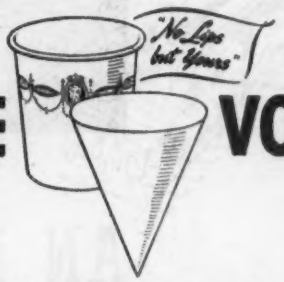

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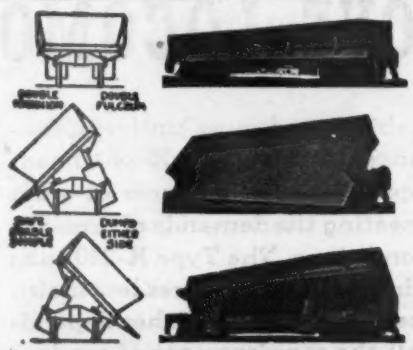

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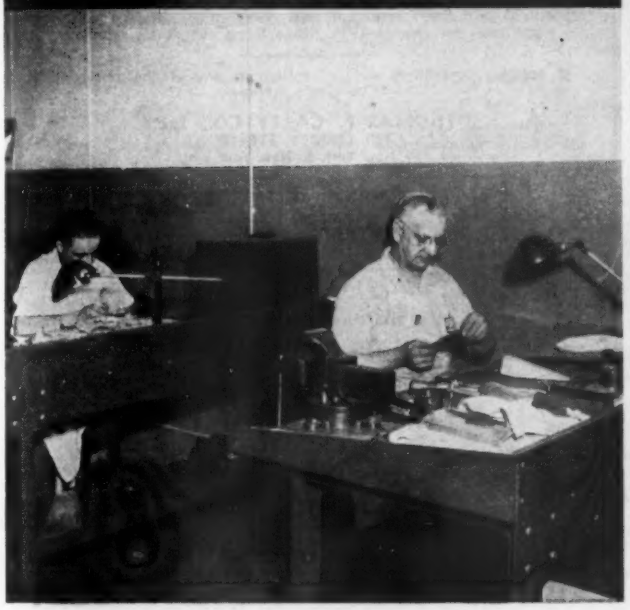

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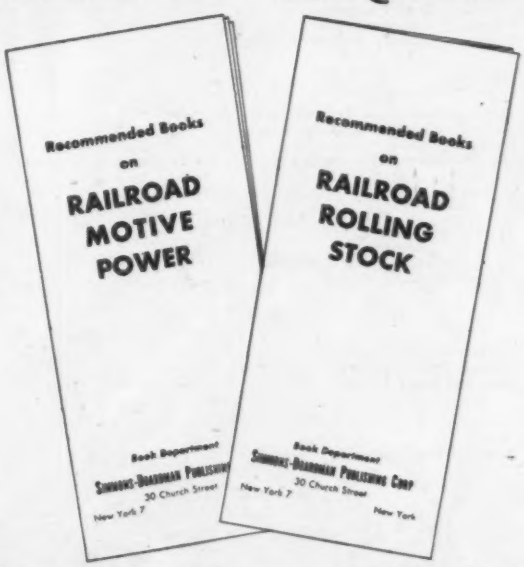
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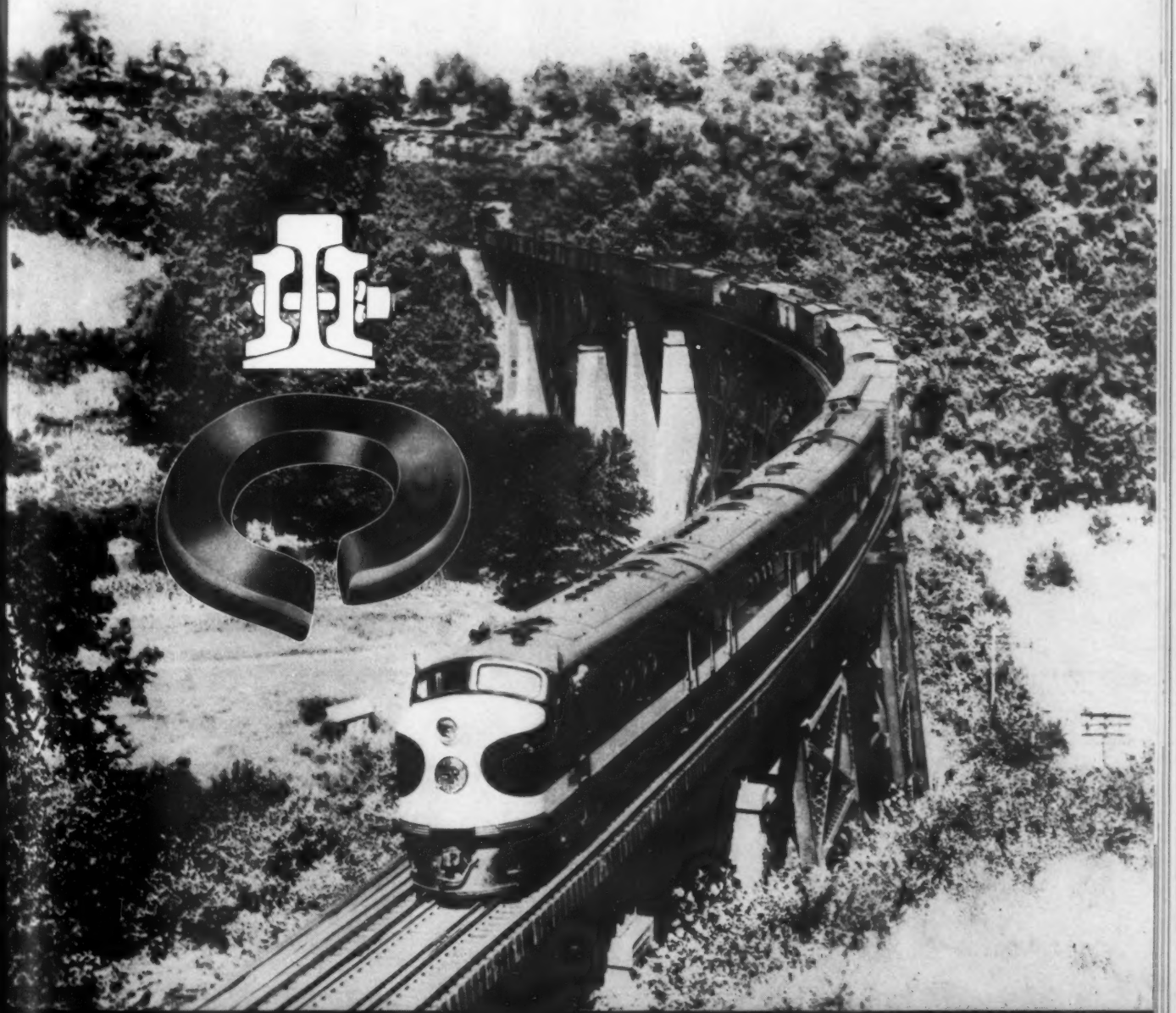

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